

**DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY
CITY OF CRESCENT CITY
COUNTY OF DEL NORTE
STATE OF CALIFORNIA**

**Board of Supervisors Chambers
Flynn Center 981 H Street Crescent City, CA**

Special Session

Tuesday February 26, 2019

4:00 PM

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The Solid Waste Management Authority of the City of Crescent City and the County of Del Norte, State of California, is now meeting in Special Session. Only those items that indicate a specific time will be heard at the assigned time. All items may be taken out of sequence to accommodate public and staff availability.

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All documents referred to in this agenda are available at the Office of the Del Norte Solid Waste Management Authority at 1700 State Street in Crescent City, between the hours of 8 A.M. and 5 P.M. Monday through Friday OR online at www.recycledelnorte.ca.gov For more information call 465-1100 or email dnswwma@recycledelnorte.ca.gov

**4:00 PM CALL MEETING TO ORDER / ROLL CALL
PLEDGE OF ALLEGIANCE**

4:01 PM PUBLIC COMMENTS: ANY MEMBER OF THE PUBLIC MAY ADDRESS THE SOLID WASTE MANAGEMENT AUTHORITY ON ANY MATTER ON OR OFF THE AGENDA. After receiving recognition from the Chair, please give your name and address for the record. Comments will be limited to three minutes.

OPEN SESSION ITEMS:

1. CONSENT AGENDA

- 1.1 Approve minutes, Special Session, Wednesday January 23, 2019. **
- 1.2 Approve Director's vacation request for 29 May – 12 June and 06-14 July 2019. **
- 1.3 Payment of claim #8383 in the amount of \$10,500.00 for invoice 2349 and the completion of audit services for FY 2017/2018. **

END CONSENT AGENDA

2. TREASURER'S REPORTS

Agenda items 2.1 through 2.5 are provided for information only

- 2.1 Director's Report for February 2019. **
- 2.2 Treasurer / Controller Reports for December 2018 **
- 2.3 Claims approved by Director & Treasurer for January 2019 **
- 2.4 Monthly Cash and Charge Reports for January 2019 **
- 2.5 Earned Revenue Comparisons between FY17/18 and FY18/19 **

DISCUSSION/ACTION ITEMS

3. LANDFILL POSTCLOSURE

- 3.1 Receive and file "Final Postclosure Maintenance Plan Update," the 'Non-Water Corrective Action Plan' and related cost-estimates for the Crescent City Landfill,' as prepared by County Engineer James Barnts. **
- 3.2 Status report regarding submittal of the Semi-annual monitoring reports for the Crescent City Landfill for January – June and July- December 2018 as prepared by Lawrence & Associates. **
- 3.3 Discussion and possible action regarding development of an Authority Ordinance specifying elevated penalties for vehicular trespass, dumping or camping on the Crescent City Landfill and other Authority-managed properties. **

4. COLLECTIONS FRANCHISE

- 4.1 Discussion and possible action regarding a letter of 19 February 2019 from Jeremy Herber of Recology Del Norte requesting the annual rate adjustment based on changes to the Consumer Price Index. **

5. TRANSFER STATION

- 5.1 Discussion and possible action regarding the letter of 20 February 2019 from Joel Wallen of Hambro WSG requesting a rate adjustment based on changes to CPI and the cost for composting of yard debris delivered to Rogue Valley Disposal. **
- 5.2 Discussion and possible action regarding proposals received for Site Identification, Assessment, and Environmental Review for a Small Volume Transfer Station, and possible hiring of Stillwater Sciences to complete the scope of work for an amount not to exceed \$29,767. **

6. OTHER GENERAL SOLID WASTE AUTHORITY MATTERS

- 6.1 Discussion and possible action regarding Resolution 2019-02 Honoring Blake Inscore's services as Chair of the Del Norte Solid Waste Management Authority. **
- 6.2 Discussion and possible action regarding the Del Norte Solid Waste Management Authority's Work Plan for FY 2019/2020. **
- 6.3 Discussion and possible action regarding Guiding Principles for Legislative Advocacy. **
- 6.4 Discussion and possible action regarding development of the Tansy Games. **
- 6.5 Discussion and possible action regarding a request for an Authority-allocated dumpster in support of the 2019 Broom Bash. **

- 6.6 Discussion and possible action regarding development of an Authority Ordinance extending producer responsibility to provide household battery recycling opportunities at all stores that sell household batteries in Del Norte County. **

7. ADJOURNMENT

Adjourn to the next Regular meeting the Del Norte Solid Waste Management Authority scheduled for 4:00 P.M. Tuesday March 19, 2019 at the Del Norte County Board of Supervisors' Chambers, 981 H Street, Suite 100 in Crescent City.

**** Asterisks next to Agenda Item indicates an associated attachment**

**DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY
CITY OF CRESCENT CITY
COUNTY OF DEL NORTE
STATE OF CALIFORNIA
MINUTES**

**Board of Supervisors Chambers
Flynn Center 981 H Street Crescent City, CA**

Special Session Wednesday January 23, 2019

4:00 PM

PRESENT: Commissioner Blake Inscore, Chair
Commissioner Chris Howard, Vice Chair
Commissioner Lori Cowan
Commissioner Jason Greenough
Director Tedd Ward
Legal Counsel Martha Rice
Authority Clerk Kyra Seymour
Authority Treasurer/Controller Rich Taylor

ABSENT: Commissioner Eli Naffah

ALSO PRESENT: Jeremy Herber, Recology Del Norte
David Slagle, CEO Hambro/WSG
Joel Wallen, Hambro /WSG
Dominic Mello, Del Norte County Code Enforcement Officer and
Manager of The Del Norte Abandoned vehicle Abatement Authority
Janet Gilbert, (County)

**4:00PM CALL MEETING TO ORDER / ROLL CALL
PLEDGE OF ALLEGIANCE**

Chair Inscore called the special meeting to order in special session at 4:00 P.M.

The roll was taken with all commissioners listed as present, apart from Commissioner Naffah.

The pledge of allegiance was led by commissioner Greenough.

4:00 PM PUBLIC COMMENTS:

1.1

Eileen Cooper (County) discussed alternating weekly pickups for recycling with weekly trash collection, in order to possibly reduce contamination.

Seeing no further public comment, the Chair closed public comments.

OPEN SESSION ITEMS:

1. CONSENT AGENDA

- 1.1 Approve minutes, Regular Session, Tuesday December 18, 2018.
- 1.2 Approve an interdepartmental transfer to Del Norte County in the amount of \$37,925.76 for sub-lease rental and interest payments.
- 1.3 Approve Director's vacation request for January 24-29, 2019.
- 1.4 Approve a budget transfer in the amount of \$101,156.

On a motion by Commissioner Cowan and seconded by Commissioner Greenough and unanimously carried on a polled vote the Del Norte Solid Waste Management Authority approved and adopted consent agenda items 1.1 through 1.4

END CONSENT AGENDA

At 4:05 P.M. Chair Inscore temporarily adjourned the special meeting of the Del Norte Solid Waste Management Authority and reconvened as the Abandoned Vehicle Abatement authority.

7 ABANDONED VEHICLE ABATEMENT SERVICE AUTHORITY (taken out of order)

- 7.1 Discussion regarding a status report of activities of the Abandoned Vehicle Abatement Service Authority since April 2018.

Dominic Mello presented 3rd and 4th quarter reports. The reports were accepted.

At 4:06 P.M. Chair Inscore adjourned the meeting as the Abandoned Vehicle Abatement Authority and reconvened the meeting as Del Norte Solid Waste Management Authority.

DISCUSSION/ACTION ITEMS

3 LANDFILL POSTCLOSURE (Taken out of order)

- 3.1 Presentation, discussion and possible action regarding a CalRecycle Illegal Disposal Site cleanup grant awarded to the County of Del Norte, including cleanup and site improvements at the Crescent City Landfill and outreach regarding managing recreational vehicles, trailers and manufactured homes at end of life.

Director Ward discussed meetings held with Dominic Mello, representatives from Parks, Pacific Power and Tolowa Dunes Stewards regarding methods to reduce vehicular trespassing and dumping on the landfill property.

4:10 P.M. (Item 6.4 also taken out of order)

- 6.4 Discussion and possible action supporting development of Tansy Games event as proposed by Janet Gilbert of Tolowa Dunes Stewards to promote removal of tansy ragwort, an invasive noxious weed.

Janet Gilbert (County) presented the initial concepts for the Tansy Games event, a community-wide competition to remove tansy ragwort. By consensus, staff were directed to continue to work with Janet Gilbert supporting the development of the Tansy Games. Staff will return to inform the Board as the details of this first event are developed.

2. TREASURER'S REPORTS

Agenda items 2.1 through 2.5 are provided for information only

- 2.1 Director's Report for January 2019. **231501**
- 2.2 Treasurer / Controller Reports for November 2018
- 2.3 Claims approved by Director & Treasurer for December 2018 **031202**
- 2.4 Monthly Cash and Charge Reports for December 2018
- 2.5 Earned Revenue Comparisons between FY17/18 and FY18/19

The above reports were presented by Director Ward and accepted.

4. COLLECTIONS FRANCHISE – No Items

5. TRANSFER STATION – No Items

6. OTHER GENERAL SOLID WASTE AUTHORITY MATTERS

- 6.1 Discussion and possible action regarding election of Del Norte Solid Waste Management Authority officers for 2019, including Chair, Vice Chair, and Secretary. **012104**

The Board discussed the election of officers for the Authority, and that the Chair and Vice Chair must be either from the City or the County.

Commissioner Howard nominated Lori Cowan to be elected as Chair.

Commissioner Cowan nominated Chris Howard to be elected as Chair.

Blake Inscore seconded the motion to elect Lori Cowan as Chair.

Jason Greenough seconded the motion to elect Chris Howard as Chair.

With two seconded motions on the floor, the last motion was the first to be voted upon. On a polled vote, the motion to elect Chris Howard as Chair received YES votes from Commissioners Cowan and Greenough, and NO votes from Commissioners Howard and Inscore. Commissioner Naffah was ABSENT from this vote.

On a polled vote, the motion to elect Lori Cowan as Chair was unanimously approved, with Commissioner Naffah ABSENT from this vote.

Commissioner Cowan nominated Jason Greenough to be elected as Vice Chair, Commissioner Howard seconded the motion, and it was unanimously approved with Commissioner Naffah ABSENT.

Commissioner Cowan nominated Eli Naffah to be elected as Secretary, Commissioner Howard seconded the motion, and it was unanimously approved with Commissioner Naffah ABSENT.

6.2 Discussion and possible action regarding **RESOLUTION NO. 2019-01 OF THE BOARD OF COMMISSIONERS OF THE DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY RESOLUTION IN SUPPORT OF A STATEWIDE COMMISSION ON RECYCLING MARKETS.**

On a motion by Commissioner Howard and seconded by Commissioner Cowan and unanimously carried on a polled vote the Del Norte Solid Waste Management Authority approved and adopted **RESOLUTION NO. 2019-01 OF THE BOARD OF COMMISSIONERS OF THE DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY RESOLUTION IN SUPPORT OF A STATEWIDE COMMISSION ON RECYCLING MARKETS.**

6.3 Discussion and possible action regarding the Independent Auditor's Report from Harshwall & Associates and the Annual Financial Statements for the Del Norte Solid Waste Management Authority for the year ended June 30, 2018, and associated responses. **012101**

Director Ward summarized the findings from the Annual Financial Statements for FY 17/18, and presented staff responses. On a motion by Commissioner Howard, seconded by Commissioner Cowan and adopted by a unanimous vote, staff were directed to submit the responses as presented.

7 ADJOURNMENT

Adjourn to the next special meeting the Del Norte Solid Waste Management Authority scheduled for 4:00 P.M. Tuesday February 26, 2019 at the Del Norte County Board of Supervisors' Chambers, 981 H Street, Suite 100 in Crescent City.

There being no further business to come before the Authority the Chair adjourned the meeting at 4:52 P.M. until the special meeting on February 26th, 2019

Blake Inscore, Chair
Del Norte Solid Waste Management Authority

Date / /

ATTEST:

Eli Naffah, Secretary
Del Norte Solid Waste Management Authority

Date / /

Submitted:

Kyra Seymour, Clerk
Del Norte Solid Waste Management Authority

Date / /



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531

Phone (707) 465-1100 Fax (707) 465-1300

www.recycledelnorte.ca.gov

VACATION REQUEST FORM

Name: TEDD WARD

Beginning Day and Date of first day of vacation (i.e. Saturday 12/1/07):

06 JULY 2019

Ending Day and Date of last day of vacation (return to work the following day):

14 JULY 2019

Signature: Tedd Ward

Date: 21 FEB 2019

Approved By: _____

Date: _____



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531

Phone (707) 465-1100 Fax (707) 465-1300

www.recycledelnorte.ca.gov

VACATION REQUEST FORM

Name: TEDD WARD

Beginning Day and Date of first day of vacation (i.e. Saturday 12/1/07):

29 MAY 2019

Ending Day and Date of last day of vacation (return to work the following day):

12 JUNE 2019

Signature: Tedd Ward Date: 21 FEB 2019

Approved By: _____ Date: _____

Vendor Harshwal & Company, LLP
16870 W Bernardo Dr., Ste. 250

Claim ID: 8383
Page 1 of 1

AUDITOR COPY



San Diego CA 92127

Vendor ID:

20027

PBSP Expense

Change of Address

Special
Warrant
Routing

Fund Dept Line Proj Amount Description

422 421 20233 \$10,500.00 INV 2349 AUDIT SERVICES FOR YEAR ENDED 0

Total Claim: \$10,500.00

I HEREBY CERTIFY THE ARTICLES OR SERVICES DESCRIBED ON THE ATTACHED INVOICES WERE NECESSARY FOR USE BY THE DEPARTMENT AND HAVE BEEN RECEIVED, AND THAT NO PRIOR CLAIM FOR SAME HAS BEEN

COPY

X

2/20/2019

Claim Date

Signature of Department Head/Authorized Deputy

1.3

Invoice

Tel: (858) 939-0017
 Fax: (858) 964-3754
 email: sanwar@harshwal.com

Invoice # 2349
 Date 2/5/2019

16870 W. Bernardo Dr., Ste 250
 San Diego, CA 92127



Bill To:
 Del Norte Solid Waste
 Management Authority
 1700 State Street
 Crescent City, CA 95531

COPY

20027
 20033

Amount	Service Description
10,500.00	Professional fee for providing audit services for financial statements for the year ended June 30, 2018
\$10,500.00	<div style="text-align: center;"> <p>RECEIVED</p> <p>FEB 15 2019</p> <p>DNSWMA</p> </div>
Total Invoice Amount	

Thank you for your business.
 Please remit payment to address above



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531

Phone (707) 465-1100 Fax (707) 465-1300

www.recycledelnorte.ca.gov

The Authority's mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

Director's Report

Date: 20 February 2019
To: Commissioners of the Del Norte Solid Waste Management Authority
From: Tedd Ward, M.S. – Director 
Reporting Period: 17 January 2019 – 20 February 2019
Attachments: e-mail from CalRecycle re. the 5 Year CIWMP Review
Invite to Recology's Recycling Center Open House March 17th

File Number: 231501 – Authority Work Plans

Summary: The Del Norte Solid Waste Management Authority continues to operate the Klamath, Gasquet and Del Norte County Transfer Stations and to provide required monitoring, accounting and reports to overseeing agencies. Authority staff provide these services without any financial support from the City of Crescent City or the County of Del Norte, and without receiving a penny of taxes. The rates charged at Authority-managed facilities continue to be lower than other similar facilities in Humboldt and Curry Counties.

Consent Agenda Item 1.2. are two requests from the Director for vacation.

Consent Agenda Item 1.3 is payment to Harshwal & Associates for completion of the audit for FY 2018/2019 for the approved and budgeted amount of \$10,500.

Landfill Post-Closure: Agenda Item 3.1 are documents produced in cooperation with County Engineer Jim Barnts as part of the 5-year permit review for this facility, and it needed to be completed by a registered civil engineer. Mr. Barnts reports that these reports have been submitted to CalRecycle.

Agenda Item 3.2 are two semi-annual reports relating to monitoring and analysis of ground and surface water quality at the Crescent City Landfill. These reports must be prepared by a water quality engineer or a registered geologist, and these reports were produced on behalf of the Authority by Lawrence & Associates.

Agenda Item 3.3 discusses the potential for staff to develop an Authority Ordinance

2.1

with elevated penalties for illegal activities on Authority-managed properties.

Also during this past month, Facilities Coordinator Kyra Seymour has worked with other Authority staff to repair areas of erosion and to cut back overgrown vegetation on drainage berms. Inspections of the landfill had reported violations both for erosion and vegetation control in past months. As Alder Camp crews were not very available, the Director approved overtime so Authority staff could eliminate these violations.

Collections Franchise:

Agenda Item 4.1 is a request from Recology for their annual CPI-based rate adjustment, which will be enacted through a Change Order and Rate Resolution, with new rates starting on 01 July 2019.

Attached to this report is an invite from Recology Del Norte to everyone who might be interested in touring the facility that is processing all recyclables collected by Recology in Del Norte County on March 17th, from 10 AM to 12 PM.

Transfer Station:

Agenda Item 5.1 is a request from Hambro WSG for their annual CPI-based rate adjustment, which will be enacted through a Change Order and Rate Resolution, with new rates starting on 01 July 2019. Included is an additional request for an increase based on changes to costs for managing grass, leaves, and brush by Rogue Valley Disposal. Staff have not had time to review this request, though the proposed changes to brush rates will be processed as a Special Fee Review as described under Division IV, section 5.A.ii of the Transfer Station Operations Agreement with Hambro WSG.

Agenda Item 5.2 is a review of the three proposals received to assist with selection and analysis of potential sites for a Northern Transfer Station.

Administration: **Agenda Item 6.1** is a Resolution honoring Blake Inscore for his public service as Authority Chair.

Agenda Item 6.2 is an updated Work Plan for the Authority for FY 2019/2020. Staff have highlighted items that are new or which will involve significant additional efforts during this period.

Also attached to this report is an e-mail from CalRecycle reminding this agency that the 5-year review of the Regional Agency Integrated Waste Management Plan needs to be reviewed and revised this year. This formal process will require new appointments to the Del Norte Solid Waste Task Force by the Crescent City Council and the County of Del

Norte.

Outreach / Advocacy: **Agenda Item 6.3** are Guiding Principles for Legislated Advocacy that were first presented in November of last year.

Agenda Item 6.4 are the rules for the Tansy Games as currently drafted.

Agenda Item 6.5 is a request for an Authority-allocated dumpster to support the Broom Bash at Pacific Shores, which the Authority has supported for the past 3 years. Dates for this year's Bash will be either March 30 or April 6.

Staff are also working with other rural public solid waste agencies in northern California in a possible collaborative effort to print a color multi-page newspaper insert as an outreach tool, possibly funded in part by oil and beverage container grant funds.

Staff also consulted with Hilda Contreras of the Community Health Center and the Del Norte Health Care District to clarify that the public may bring their home-generated sharps in appropriate FDA-Approved containers to the Community Health Center or the Del Norte Senior Center and drop them off for no charge. Authority staff continue to collect a 38 gallon cart filled with sharps containers from the general public, though the Health Care District pays \$75 per such collection. FDA-approved sharps containers may also be disposed at the Del Norte County Transfer Station for no charge.

Agenda Item 6.6 addresses the potential development of an Authority Ordinance to establish a county-wide extended producer responsibility household battery recycling program in Del Norte County.

Facilities: Staff worked intensively with Andrew Butcher of Digital Needs Services and Creative Information Systems staff to install and train staff to use an upgraded version of the Scale Management Software used at the gate of the Del Norte County Transfer Station. Staff are planning that the new software will be operational starting no later than March 1st.

Staffing: During this past month, Jeffery Mathison was made a permanent member of the Authority staff. Staff also asked Human Resources to open recruitment for hiring a temporary/part-time refuse site attendant.

Patrick Hickey the SEIU 1021 union representative, and Authority legal counsel have all been reminded that the current Memorandum of Understanding between the Authority and Authority Employees as represented by SEIU 1021 will expire in June 2019. Discussions and negotiations on this issue will continue.



**RECOLOGY'S RECYCLING CENTER
PUBLIC OPEN HOUSE**

**PANCAKES 10-11 AM
TOURS 10 AM-12 PM**

**MAKE YOUR OWN
BEESWAX WRAP
&
DISHWASHER TABS!**

MATERIALS AND SUPPLIES PROVIDED

*It's
a
Green Thing*



**Sunday, March 17th
10 am - 12 pm**



555 VANCE AVE, SAMOA CA

Tedd Ward

From: Local Assistance and Market Development Branch <LAMD@calrecycle.ca.gov>
Sent: Thursday, January 31, 2019 1:30 AM
To: tedd@recycledelnorte.ca.gov
Subject: Del Norte Solid Waste Management Authority 5-Year CIWMP or RAIWMP Review Report is due in 1 year

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Tedd Ward

The purpose of this letter is to notify you, as the Primary Annual Report Contact, that Del Norte Solid Waste Management Authority 5-Year Countywide or Regional Agency Integrated Waste Management Plan (CIWMP or RAIWMP) Review Report is due in one year to the Department of Resources Recycling and Recovery (CalRecycle) by January 31, 2020.

Public Resources Code (PRC), Sections 41770 and 41822 and Title 14, California Code of Regulations (CCR), Section 18788 require that each CIWMP and RAIWMP, and the elements thereof, be reviewed, revised, if necessary, and submitted to CalRecycle every five years. CalRecycle has developed specific guidelines and tools to assist in the completion of this review and the preparation of the review report, including a 5-Year CIWMP or RAIWMP Review Report template and corresponding instructions. You can access these resources at <https://www.calrecycle.ca.gov/LGCentral/Library/Policy/5YrReview/>.

Should the County (or Regional Agency) determine, as a result of the 5-Year CIWMP (or RAIWMP) Review, that a revision to one or more of the planning documents is necessary, a revision schedule for the applicable planning documents is due at the time of the 5-Year CIWMP (or RAIWMP) Review Report. In such a case, please contact your Local Assistance and Market Development Representative (<https://www2.calrecycle.ca.gov/LGCentral/Reports/Contacts>) to ensure that a revision is necessary and to review the revision schedule, as applicable.

We sincerely hope this information will assist the Local Task Force (LTF) in its review of and comment on the CIWMP (or RAIMWP) adequacy and to help the County (or Regional Agency) in its preparation of the 5-Year CIWMP (or RAIMWP) Review Report. Additionally, your Local Assistance and Market Development Representative is available to provide technical assistance to the County (or Regional Agency) and the LTF throughout the process.

Solid Waste
Balance Sheet
December 31, 2018

Unaudited

ASSETS

422 010 00000	Cash Solid Waste	1,046,962.87
422 010 00300	Imprest Cash	3,500.00
422 010 00500	I Bank Loan Deposit Held by County	198,177.17
422 010 01100	Accounts Receivable	2,755.31
422 010 03200	Land	493,000.00
422 010 03300	Transfer Station	3,266,990.64
422 010 03400	Equipment	158,443.55
422 010 03410	Buildings & Improvements	141,638.89
422 010 03440	Accum Depr Equipment	(158,444.00)
422 010 03450	Accum Depr Bldg & Improv	(215,054.00)
422 010 03460	Accum Depr Transfer Station	(1,000,552.00)
	Total Assets	<u><u>3,937,418.43</u></u>

LIABILITIES AND FUND EQUITY

422 010 05105	Sales Tax Payable	58.12
422 010 05210	Sublease Payable	2,513,212.50
422 010 05300	Compensated Absences Payable	57,426.74
422 010 05400	Deferred Revenue	1,934.31
422 010 05500	Post Closure Liability	2,046,994.00
422 010 05600	Net OPEB Obligation	423,573.00
422 010 07100	Fund Balance	(1,816,777.31)
422 010 09600	Investment in Capital Assets net of related debt	671,843.00
	Revenue	1,724,013.65
	Expenditure	(1,684,859.58)
	Total Liabilities and Fund Equity	<u><u>3,937,418.43</u></u>

RECEIVED
JAN 29 2019

DNSWMA

2.2

Del Norte Solid Waste Management Authority

A/R Aging Summary

As of February 7, 2019

	Current	1 - 30	31 - 60	61 - 90	> 90	TOTAL
Affordable Home & Rental Rep.	15.62	0.00	0.00	0.00	0.00	15.62
Agricultural Commission(solid waste only)	205.37	83.48	0.00	0.00	0.00	288.85
Alexandre EcoDairy Farms	848.06	476.28	0.00	0.00	0.00	1,324.34
Babich Construction	649.57	0.00	0.00	0.00	0.00	649.57
Bart Kast Builders	16.66	0.00	0.00	0.00	0.00	16.66
Bayside Excavation	1,664.32	0.00	0.00	0.00	0.00	1,664.32
Benner Mini Storage	30.29	0.00	0.00	0.00	0.00	30.29
Borges Dairy	109.04	0.00	0.00	0.00	0.00	109.04
Brown, Eileen	564.87	0.00	0.00	0.00	0.00	564.87
Cal-Trans	28.04	7.96	0.00	0.00	0.00	36.00
California Auto Image	404.35	0.00	0.00	0.00	0.00	404.35
California Dept. of Fish & Wildlife	0.01	0.00	0.00	0.00	0.00	0.01
California Dept. Parks & Rec.	361.05	407.47	553.45	66.34	0.00	1,388.31
Castlerock Countertop's	280.16	0.00	0.00	0.00	0.00	280.16
Cetnar Construction Inc.*****HOLD*****	48.15	152.02	130.44	681.60	0.00	1,012.21
City of Crescent City.	926.16	0.00	0.00	0.00	0.00	926.16
Cornerstone Assembly of God	89.35	0.00	0.00	0.00	0.00	89.35
Crescent Ace Hardware.	737.54	0.00	0.00	0.00	0.00	737.54
Crescent City KOA	31.80	0.00	0.00	0.00	0.00	31.80
Crescent Electric	87.84	0.00	0.00	0.00	0.00	87.84
Danco Builders	1,208.49	0.00	0.00	0.00	0.00	1,208.49
DDR	18.17	0.00	0.00	0.00	0.00	18.17
Del Norte Ambulance	175.23	0.00	0.00	0.00	0.00	175.23
Del Norte Office Supply.	30.64	24.23	0.00	0.00	0.00	54.87
Del Norte Realty	16.66	0.00	0.00	0.00	0.00	16.66
Del Norte Senior Center	23.35	0.00	0.00	0.00	0.00	23.35
DN Unified School District	1,143.15	0.00	0.00	0.00	0.00	1,143.15
DNC Abandoned Vehicle Abatement	280.43	0.00	0.00	0.00	0.00	280.43
DNC Code Enforcement - Blight	1,234.82	0.00	0.00	0.00	0.00	1,234.82
DNC Public Nuisance Abatement	259.23	462.07	0.00	0.00	0.00	721.30
Elk Valley Casino	72.69	0.00	0.00	0.00	0.00	72.69
Elk Valley Rancheria	36.71	0.00	0.00	0.00	0.00	36.71
Fashion Blacksmith	35.48	0.00	0.00	0.00	0.00	35.48
G. H. Outreach	186.30	0.00	0.00	0.00	0.00	186.30
GR Construction	75.72	0.00	0.00	0.00	0.00	75.72
Green Scapes	163.40	0.00	0.00	0.00	0.00	163.40
Griffin's Furniture Outlet	57.44	95.39	0.00	0.00	0.00	152.83
Hambro/Waste Solutions Group	20.44	0.00	0.00	0.00	0.00	20.44
Hank's Hauling	36.35	0.00	0.00	0.00	0.00	36.35
Hartley Construction	663.31	0.00	0.00	0.00	0.00	663.31
HASP / Jordan Recovery Centers	107.52	0.00	0.00	0.00	0.00	107.52
Hemmingsen Contracting Company	2,716.83	0.00	0.00	0.00	0.00	2,716.83
Home Network Pest Control, Inc	137.81	0.00	0.00	0.00	0.00	137.81
Humboldt Moving & Storage	333.17	0.00	0.00	0.00	0.00	333.17
Investment Realty	80.97	0.00	0.00	0.00	0.00	80.97
John Pappas Drywall	44.10	0.00	0.00	0.00	0.00	44.10
Kays Yard Service	0.00	-1.44	0.00	0.00	0.00	-1.44
Kirkland's Lawn & Yard Service	1,323.99	0.00	0.00	0.00	0.00	1,323.99
Kraft, Tom & Patti	34.83	0.00	0.00	0.00	0.00	34.83
Lola Paquette Property Mgmt	259.02	0.00	0.00	0.00	0.00	259.02
Malloroy Construction	9.90	0.00	0.00	0.00	0.00	9.90
Mastaloudis Homes Inc.	79.80	0.00	0.00	0.00	0.00	79.80
McMurray & Sons, Inc.	1,266.04	0.00	0.00	0.00	0.00	1,266.04
Miller Construction	71.74	0.00	0.00	0.00	0.00	71.74
Ming Tree Real Estate	92.38	0.00	0.00	0.00	0.00	92.38
Mow Blow and Go	69.67	0.00	0.00	0.00	0.00	69.67
Murray Construction	403.19	0.00	0.00	0.00	0.00	403.19
New Dawn Support Services	255.63	0.00	0.00	0.00	0.00	255.63
North Coast Properties	94.51	0.00	0.00	0.00	0.00	94.51
North Woods Realty	327.46	321.57	0.00	0.00	0.00	649.03
Northridge Electric	213.27	219.59	0.00	0.00	0.00	432.86
Pacific NW Physical Therapy *COLLECTIONS*	0.00	0.05	0.05	0.91	9.09	10.10
Pacific Ocean Park	601.22	0.00	0.00	0.00	0.00	601.22
PALM Industries, Inc.	0.00	51.49	0.00	0.00	0.00	51.49
Parkway Feed	66.63	0.00	0.00	0.00	0.00	66.63
Peasley's Property Mang.	18.17	0.00	0.00	0.00	0.00	18.17

Del Norte Solid Waste Management Authority
A/R Aging Summary
 As of February 7, 2019

	Current	1 - 30	31 - 60	61 - 90	> 90	TOTAL
Pelican Bay Evangelical Free Church	12.12	0.00	0.00	0.00	0.00	12.12
Pelican Bay Roofing Co.	0.00	66.64	0.00	0.00	0.00	66.64
Plunkett's Family Painting	15.14	0.00	0.00	0.00	0.00	15.14
Positive Solutions	0.00	431.70	0.00	0.00	0.00	431.70
Ray's Mobile Home Service	254.46	25.74	0.00	0.00	0.00	280.20
Recology Del Norte (Franchise)	114,649.55	0.00	0.00	0.00	0.00	114,649.55
Recology Del Norte (Prison)	15,292.43	0.00	0.00	0.00	0.00	15,292.43
Red Sky Roofing	9,297.73	7,647.73	0.00	0.00	0.00	16,945.46
Redwood National Park	216.56	353.78	0.00	0.00	0.00	570.34
Reservation Ranch *COLLECTIONS*	0.00	0.00	0.00	0.00	1,503.53	1,503.53
Richterich & Jones Const	130.24	0.00	0.00	0.00	0.00	130.24
Rick Parker Construction	118.12	0.00	0.00	0.00	0.00	118.12
Ron Spitzner	45.61	0.00	0.00	0.00	0.00	45.61
Roy Rook Construction	191.57	0.00	0.00	0.00	0.00	191.57
Rumiano Cheese Company	16.66	0.00	0.00	0.00	0.00	16.66
Schnacker's *COLLECTIONS*	0.00	0.00	0.00	0.00	834.87	834.87
Seagull Apartments	0.00	0.08	0.00	0.00	0.00	0.08
Seawood Village	2,569.92	0.00	0.00	0.00	0.00	2,569.92
Smith River Equipment	31.80	36.35	0.00	0.00	0.00	68.15
Sprint Courier Service	166.58	0.00	0.00	0.00	0.00	166.58
Spruce Haven Mobile Home Park	7.75	0.00	0.00	0.00	0.00	7.75
Stephen F White Gen.Cont. Inc.	104.97	39.49	0.00	0.00	0.00	144.46
Stone Roofing	6,736.05	0.00	0.00	0.00	0.00	6,736.05
Swanson, Ray C. Construction	62.09	0.00	0.00	0.00	0.00	62.09
Tab & Associates	259.62	0.00	0.00	0.00	0.00	259.62
Tim Haban Construction	102.97	0.00	0.00	0.00	0.00	102.97
Tolowa Dee-Ni' Nation	258.83	0.00	0.00	0.00	0.00	258.83
Trees of Mystery	218.64	0.00	0.00	0.00	0.00	218.64
Van Arsdale Construction	987.39	0.00	0.00	0.00	0.00	987.39
Wahlund Construction	1,667.35	0.00	0.00	0.00	0.00	1,667.35
Yurok Indian Housing Authority	72.04	27.62	0.00	0.00	0.00	99.66
Yurok Tribe	1,246.00	117.72	326.68	0.00	0.00	1,690.40
TOTAL	176,176.30	11,047.01	1,010.62	748.85	2,347.49	191,330.27

CLAIMS APPROVED BY THE DIRECTOR

Del Norte Solid Waste Management Authority

Claims for January 2019

Date Paid	Paid to:	Budget	Amt. Paid	Description	Claim #
1/2/2019	Taylor, Richard D.	20235	\$ 420.00	Treasurer/Controller Services December 2018	8356
1/2/2019	U S Bank Corp P S	20224	\$ 9.66	ORD 111-6563323-8167445 Screen Protector for iPad	8357
	U S Bank Corp P S	20224	\$ 15.02	TRAN 588344741762362 BW IPAD SP	
	U S Bank Corp P S	20290	\$ 3.00	REC 1417903A011VDR033 Parking Sacramento 12/06/18	
	U S Bank Corp P S	20290	\$ 12.00	RCPT 488 Parking L St Sacramento 12/06/18	
	U S Bank Corp P S	20180	\$ 48.34	REC 85240005939921 Securitylight 180D Solar Powerd	
1/4/2019	Mathison, Jeffery	20290	\$ 256.15	Mileage reimbursement 11/18-12/31/18	8358
1/4/2019	G.H. Outreach	20285	\$ 75.00	INV 302496 December 2018 Recycling services	8359
1/4/2019	Curry Transfer Roto-Rooter	20140	\$ 173.08	INV 65955834 KTS PortaPotty December 2018	8360
	Curry Transfer Roto-Rooter	20140	\$ 173.08	INV 65955833 GTS PortaPotty December 2018	
1/7/2019	Progressive Auto Ins.	20152	\$ 74.00	Auto Insurance Premium Change, new driver	8361
1/8/2019	Recology Del Norte	20238	\$ 775.32	INV 3388 Klamath Beach Rd 12/18 bin pull	8362
	Recology Del Norte	20238	\$ 387.66	INV 3389 Old Gasquet Toll Rd 12/18 bin pull	
1/8/2019	DN Auditor	20237	\$ 2,345.36	Debit/Credit Mo. December 2018	Interdepartmental
1/8/2019	DN Auditor	20297	\$ 41.83	C. Renner Petroleum fuel charges 12/15-31/18	Interdepartmental
1/9/2019	Ward, Tedd	20290	\$ 21.46	Mileage reimbursement 01/08/19, GTS	8363
1/9/2019	Ward, Tedd	20121	\$ 34.62	Cell Phone Allowance 01/04/19	Interdepartmental
1/11/2019	Hambro/Waste Solutions Group	20239	\$ 161,037.58	INV 2018-12 Material Management December 2018	8364
1/11/2019	DN Auditor	20155	\$ 539.50	P.L & MM Ins. 18/19 - 2nd Qtr.	Interdepartmental
1/14/2019	Quill	20140	\$ 29.01	INV 4150152 Recyc pprtowel 2Ply 8 pk, 1	8365
	Quill	20224	\$ 39.76	INV 4096844 Brother tze231 2Pk 1/1 blk/wh, 1	
	Quill	20224	\$ 24.27	INV 4096844 Base prong f/fstnr 1In cap, 2	
	Quill	20140	\$ 8.15	INV 4096844 Purell natural hd sntzr 8Oz, 2	
	Quill	20140	\$ 8.80	INV 4096844 Glove, Exam ntrl pf rbe md100Bx, 1	
	Quill	20224	\$ 2.14	INV 4096844 Standard staples 5000Ct, 1	
1/15/2019	Butcher, Andrew	20231	\$ 750.00	INV 2729 IT Services February 2019	8366
1/15/2019	United States Cellular	20121	\$ 86.63	INV 0287927534 01/04-02/03/19 Cell Service	8367
1/16/2019	Black & Rice LLP	20234	\$ 451.00	Statement for December 2018 Legal Fees	8368
1/18/2019	Canon Financial Services	20221	\$ 37.99	INV 19661193 Printing charges December 2018	8369
	Canon Financial Services	20250	\$ 142.02	INV 19661193 Contract rental charges January 2019	
1/22/2019	Recology Del Norte	20288	\$ 269.09	BILL 05504089 900 Tenth St - City Yard	8370
	Recology Del Norte	20283	\$ 487.69	BILL 05504071 500 Cooper Ave - County Yard	
	Recology Del Norte	20288	\$ 642.74	BILL 05504055 1001 Front St - Cultural Center	
1/24/2019	DN Auditor	20297	\$ 22.45	C. Renner Petroleum fuel charges 01/01-15/19	Interdepartmental
1/24/2019	DN Auditor	70530-199	\$ 37,373.00	Interfund Cost Plan Jul-Dec 2018	Interdepartmental
1/25/2019	DN County Information Technology	20230	\$ 23.31	INV 22947 Labor, Board Meeting 01/23/19	Interdepartmental
1/25/2019	Ward, Tedd	20121	\$ 34.62	Cell Phone Allowance 01/18/19	Interdepartmental
1/25/2019	DN Auditor	20121	\$ 119.97	01/19-02/18/19 office telephone service	Interdepartmental
1/29/2019	Crescent Ace Hardware	20180	\$ 21.49	INV 756003 Straight Lever Keyed SS, 1	8371
	Crescent Ace Hardware	20175	\$ 107.49	INV 753573 Surge Batt Backup 650VA, 1	
	Crescent Ace Hardware	20224	\$ 8.59	INV 752499 Tape Rule 1X25 Selfcentr, 1	
	Crescent Ace Hardware	20224	\$ 2.14	INV 752499 Tape Flagging Orange150', 1	
	Crescent Ace Hardware	20224	\$ 13.96	INV 752499 Rule 6'Wood Fold In, 1	
1/29/2019	Mission Linen Supply	20140	\$ 30.86	INV 509147139 Linen Service 01/29/19	8372
	Mission Linen Supply	20140	\$ 30.86	INV 509055256 Linen Service 01/15/19	
	Mission Linen Supply	20140	\$ 30.86	INV 508961447 Linen Service 01/01/19	
1/30/2019	DN County Road Division	20230	\$ 541.59	INV 18019 Landfill NCRWWCS Report	Interdepartmental
1/30/2019	DN County Road Division	20230	\$ 238.72	INV 18020 Transfer Cap Report	Interdepartmental
	TOTAL		\$ 208,021.86		

DNSWMA			
GRAND TOTALS			
January 2019			
	Amount to 422-421 91003	Amount to 422-421 91004	TOTAL AMOUNT
	66.53%	33.47%	
DNCTS Cash Total	28,878.47	14,528.22	43,406.69
DNCTS Charge Total	121,498.29	61,123.52	182,621.81
DNCTS Credit/Debit	31,812.86	16,004.46	47,817.32
DNCTS Adjustment	-665.22	665.22	0.00
DNCTS Totals	181,524.40	92,321.42	273,845.82
Klamath Cash Total		4,399.45	4,399.45
Klamath Charge Total		281.11	281.11
Klamath Adjustment			
Klamath Totals		4,680.56	4,680.56
Gasquet Cash Total		1,320.79	1,320.79
Gasquet Charge Total		9.00	9.00
Gasquet Adjustment			
Gasquet Totals		1,329.79	1,329.79
GRAND TOTALS	181,524.40	98,331.77	279,856.17

2.4

MONTHLY SPLIT SHEET
DNSWMA TRANSFER STATION
MONTH: JANUARY 2019

Date	Cash	Checks	Cash/Check Total	Visa	Master	Discover	AmExp	Credit Card Total	Charges	Grand Total	66.53% 91003	33.47% 91004	20286	Total
1	CLOSED													
2	\$ 2,293.62	\$ 624.29	\$ 2,917.91	\$ 2,293.14	\$ 100.09		\$ 269.56	\$ 2,662.79	\$ 13,557.24	\$ 19,137.94	\$ 1,941.29	\$ 976.62	(\$0.70)	\$ 2,917.21
3	\$ 2,158.08	\$ 57.73	\$ 2,215.81	\$ 1,268.29	\$ 196.30		\$ 43.92	\$ 1,508.51	\$ 7,076.06	\$ 10,800.38	\$ 1,474.18	\$ 741.63	(\$0.41)	\$ 2,215.40
4	\$ 1,972.12	\$ 35.37	\$ 2,007.49	\$ 1,223.66	\$ 180.75		\$ 140.84	\$ 1,545.25	\$ 7,885.70	\$ 11,438.44	\$ 1,335.58	\$ 671.91	(\$0.20)	\$ 2,007.29
5	\$ 1,250.41	\$ 164.15	\$ 1,414.56	\$ 1,226.81	\$ 120.16		\$ 25.74	\$ 1,372.71	\$ 4,632.05	\$ 7,419.32	\$ 941.11	\$ 473.45	\$0.12	\$ 1,414.68
6	\$ 1,105.64	\$ 34.83	\$ 1,140.47	\$ 793.37		\$ 10.60		\$ 803.97	\$ 186.49	\$ 2,130.93	\$ 758.75	\$ 381.72	\$0.27	\$ 1,140.74
7	\$ 1,196.15	\$ 147.66	\$ 1,343.81	\$ 1,131.23	\$ 112.24		\$ 74.21	\$ 1,317.68	\$ 7,668.98	\$ 10,330.47	\$ 894.04	\$ 449.77	(\$4.22)	\$ 1,339.69
8	\$ 548.55		\$ 548.55	\$ 638.21				\$ 638.21	\$ 7,840.51	\$ 9,027.27	\$ 364.95	\$ 183.60	\$0.01	\$ 548.56
9	\$ 649.27	\$ 48.46	\$ 697.73	\$ 350.16	\$ 54.69			\$ 404.85	\$ 4,477.93	\$ 5,580.51	\$ 484.20	\$ 233.53	(\$0.01)	\$ 697.72
10	\$ 1,228.47	\$ 39.73	\$ 1,268.20	\$ 1,895.54	\$ 55.60			\$ 1,951.14	\$ 7,274.33	\$ 10,493.67	\$ 843.73	\$ 424.47	(\$0.08)	\$ 1,268.12
11	\$ 1,419.29	\$ 233.93	\$ 1,653.22	\$ 1,729.23	\$ 34.83		\$ 324.26	\$ 2,460.50	\$ 228.54	\$ 16,305.50	\$ 1,099.89	\$ 553.33	\$0.01	\$ 1,653.23
12	\$ 2,327.72	\$ 151.62	\$ 2,479.34	\$ 2,052.77	\$ 83.47			\$ 1,937.72	\$ 1,564.10	\$ 5,569.60	\$ 1,375.69	\$ 692.09	\$0.96	\$ 2,068.74
13	\$ 1,962.57	\$ 105.21	\$ 2,067.78	\$ 1,752.79	\$ 184.93		\$ 16.66	\$ 2,583.69	\$ 9,244.43	\$ 14,028.76	\$ 1,464.09	\$ 736.55	(\$0.05)	\$ 2,200.59
14	\$ 1,733.57	\$ 467.07	\$ 2,200.64	\$ 2,539.41	\$ 27.62		\$ 159.63	\$ 1,644.03	\$ 8,697.52	\$ 11,643.54	\$ 866.21	\$ 435.78	(\$0.25)	\$ 1,301.74
15	\$ 1,114.03	\$ 187.96	\$ 1,301.99	\$ 1,476.65	\$ 7.75			\$ 1,091.88	\$ 4,325.14	\$ 5,991.02	\$ 381.88	\$ 192.12	(\$0.16)	\$ 573.84
16	\$ 554.31	\$ 19.69	\$ 574.00	\$ 973.13	\$ 118.75			\$ 388.78	\$ 5,247.02	\$ 5,988.86	\$ 234.89	\$ 118.17	(\$0.55)	\$ 362.51
17	\$ 339.43	\$ 13.63	\$ 353.06	\$ 356.97	\$ 31.81		\$ 53.00	\$ 1,141.39	\$ 6,465.24	\$ 8,562.78	\$ 636.13	\$ 320.02	\$0.00	\$ 956.15
18	\$ 916.78	\$ 39.37	\$ 956.15	\$ 1,079.30	\$ 9.09			\$ 640.08	\$ 405.87	\$ 1,614.17	\$ 378.04	\$ 190.18	\$0.00	\$ 568.22
19	\$ 543.63	\$ 24.59	\$ 568.22	\$ 435.63	\$ 204.45			\$ 549.63	\$ 66.99	\$ 1,329.22	\$ 474.09	\$ 238.51	\$0.01	\$ 712.61
20	\$ 662.06	\$ 50.54	\$ 712.60	\$ 440.59	\$ 109.04			\$ 1,409.70	\$ 7,880.51	\$ 10,889.61	\$ 1,064.08	\$ 535.32	\$0.76	\$ 1,600.16
21	\$ 1,441.54	\$ 157.86	\$ 1,599.40	\$ 1,323.08	\$ 33.61	\$ 9.09	\$ 43.92	\$ 1,686.91	\$ 9,713.41	\$ 12,704.69	\$ 881.10	\$ 443.27	\$1.10	\$ 1,325.47
22	\$ 1,266.46	\$ 57.91	\$ 1,324.37	\$ 1,266.82	\$ 346.23	\$ 17.51	\$ 36.35	\$ 1,217.24	\$ 4,137.50	\$ 6,420.58	\$ 709.10	\$ 356.74	\$0.31	\$ 1,066.15
23	\$ 1,055.24	\$ 10.60	\$ 1,065.84	\$ 771.20	\$ 446.04			\$ 1,643.60	\$ 6,311.67	\$ 9,380.11	\$ 947.95	\$ 476.89	\$1.46	\$ 1,426.30
24	\$ 1,089.82	\$ 335.02	\$ 1,424.84	\$ 1,182.70	\$ 317.03	\$ 143.87		\$ 1,364.91	\$ 8,616.52	\$ 11,370.59	\$ 924.21	\$ 464.95	\$0.01	\$ 1,389.17
25	\$ 1,287.52	\$ 101.64	\$ 1,389.16	\$ 1,243.58	\$ 100.13		\$ 21.20	\$ 2,448.85	\$ 6,621.51	\$ 5,406.17	\$ 1,533.39	\$ 771.42	(\$0.03)	\$ 2,304.78
26	\$ 2,066.20	\$ 238.61	\$ 2,304.81	\$ 2,248.33	\$ 125.96	\$ 7.75	\$ 66.81	\$ 2,217.58	\$ 1,284.38	\$ 5,838.21	\$ 1,554.31	\$ 781.94	\$1.14	\$ 2,337.39
27	\$ 2,216.07	\$ 120.18	\$ 2,336.25	\$ 2,065.78	\$ 139.68	\$ 12.12		\$ 1,220.47	\$ 7,815.11	\$ 10,506.93	\$ 978.89	\$ 492.46	(\$1.03)	\$ 1,470.32
28	\$ 1,415.14	\$ 56.21	\$ 1,471.35	\$ 977.64	\$ 179.23	\$ 48.46	\$ 15.14	\$ 3,293.19	\$ 11,498.43	\$ 15,965.42	\$ 780.93	\$ 392.87	\$0.12	\$ 1,173.92
29	\$ 1,131.39	\$ 42.41	\$ 1,173.80	\$ 3,146.32	\$ 33.49	\$ 42.40	\$ 70.98	\$ 3,777.58	\$ 8,979.82	\$ 14,088.67	\$ 885.69	\$ 445.58	\$0.01	\$ 1,331.28
30	\$ 1,290.59	\$ 40.68	\$ 1,331.27	\$ 3,159.41	\$ 18.17			\$ 1,150.42	\$ 5,999.59	\$ 8,714.08	\$ 1,040.58	\$ 523.49	\$0.50	\$ 1,564.57
31	\$ 1,383.07	\$ 181.00	\$ 1,564.07	\$ 866.57	\$ 283.85			\$ -						
TOTALS	\$ 39,618.74	\$ 3,787.95	\$ 43,406.69	\$ 42,508.31	\$ 3,654.99	\$ 291.80	\$ 1,362.22	\$ 47,817.32	\$ 182,621.81	\$ 273,845.82	\$ 28,878.47	\$ 14,528.22	(\$0.96)	\$ 43,405.73

\$80 oil paid out

\$4.00 oil paid out

DAILY TICKET REPORT
DNSWMA TRANSFER STATION
MONTH: January 2019

Date	BEGIN	END	VOIDED TICKETS	TICKET COUNT	
1	CLOSED				
2	1052133	1052455		323	
3	1052456	1052701	2	244	
4	1052702	1052953		252	
5	1052954	1053121		168	
6	1053122	1053220		99	
7	1053221	1053412		192	
8	1053413	1053524		112	
9	1053525	1053623		99	
10	1053624	1053803		180	
11	1053804	1053988		185	
12	1053989	1054234		246	
13	1054235	1054476		242	
14	1054477	1054723		247	
15	1054724	1054877		154	
16	1054878	1054986		109	
17	1054987	1055045	1	58	
18	1055046	1055150		105	
19	1055151	1055222	1	71	
20	1055223	1055317		95	
21	1055318	1055510		193	
22	1055511	1055720		210	
23	1055721	1055841		121	High
24	1055842	1056039		198	323
25	1056040	1056236		197	
26	1056237	1056474		238	Low
27	1056475	1056733		259	58
28	1056734	1056923		190	
29	1056924	1057084		161	Daily Ave.
30	1057085	1057249		165	176
31	1057250	1057415		166	
TOTAL			4	5279	

DNSWMA

KLAMATH TRANSFER STATION - DEPOSITS

January-2019

Date	Cash	Checks	TOTAL Deposit	Over / Short	Sales	Charges	TOTAL	
							Sales	Cash + Charge
January 2, 2019	365.90	64.23	430.13		430.13		430.13	17
January 6, 2019	703.30	116.23	819.53		819.53	218.64	1,038.17	40
January 9, 2019	165.78	64.24	230.02	(0.01)	230.03		230.02	12
January 13, 2019	832.22	65.81	898.03		898.03		898.03	44
January 16, 2019	69.25	142.24	211.49	0.04	211.45	62.47	273.96	10
January 20, 2019	433.14	229.05	662.19		662.19		662.19	21
January 23, 2019	313.67	60.54	374.21		374.21		374.21	17
January 27, 2019	480.71	20.82	501.53		501.53		501.53	30
January 30, 2019	272.32		272.32	0.23	272.09		272.32	16
			0.00		0.00		0.00	
TOTAL	3,636.29	763.16	\$4,399.45	0.26	4,399.19	\$281.11	\$4,680.56	207

TOTAL SALES (CASH + CHARGE)

Date	Wednesday	Friday	Sunday
January 2, 2019	430.13		
January 6, 2019			1038.17
January 9, 2019	230.02		
January 13, 2019			898.03
January 16, 2019	273.96		
January 20, 2019			662.19
January 23, 2019	374.21		
January 27, 2019			501.53
January 30, 2019	272.32		

TOTALS	1,580.64	\$0.00	\$3,099.92
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DAILY AVERAGE	316.13		\$774.98
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**DNSWMA
GASQUET TRANSFER STATION - DEPOSITS
January-2019**

Date	Cash	Checks	TOTAL Deposit	Over / Short	Sales	TOTAL Sales	Charges	TOTAL Cash + Charge	Tickets Notes
January 5, 2019	182.99	105.61	288.60		288.60	288.60		288.60	22
January 12, 2019	278.62	36.00	314.62		314.62	314.62		314.62	22
January 19, 2019	193.64	109.26	302.90		302.90	302.90		302.90	25
January 26, 2019	351.36	63.31	414.67		414.67	414.67	9.00	423.67	33
			0.00			0.00		0.00	
			0.00			0.00		0.00	
			0.00			0.00		0.00	
			0.00			0.00		0.00	
			0.00			0.00		0.00	
TOTAL	\$ 1,006.61	\$ 314.18	\$ 1,320.79	\$ -	\$ 1,320.79	\$ 1,320.79	\$ 9.00	\$ 1,329.79	102

TOTAL SALES (CASH + CHARGE)

Date	Thursday	Saturday
January 5, 2019		288.60
January 12, 2019		314.62
January 19, 2019		302.90
January 26, 2019		423.67
TOTALS	\$0.00	\$1,329.79
DAILY AVERAGE		\$332.45

AUTHORITY REVENUE REPORT January 2018

2017/18

2018/2019

**Authority
Service Fees**

2017/18		Comparison FY17/18	2018/2019	
			Actual / Month	Over Budget
July	\$ 115,382.33	\$ (1,965.59)	\$ 113,416.74	\$ 9,682.32
August	\$ 118,024.42	\$ (2,917.81)	\$ 115,106.61	\$ 11,372.19
September	\$ 104,891.71	\$ 1,670.12	\$ 106,561.83	\$ 2,827.41
October	\$ 96,243.50	\$ 20,112.53	\$ 116,356.03	\$ 12,621.61
November	\$ 87,399.47	\$ 10,698.89	\$ 98,098.36	\$ (5,636.06)
December	\$ 89,344.86	\$ (303.87)	\$ 89,040.99	\$ (14,693.43)
January	\$ 100,555.83	\$ (2,224.06)	\$ 98,331.77	\$ (5,402.65)
February	\$ 87,672.05	\$ -		\$ -
March	\$ 98,856.22	\$ -		\$ -
April	\$ 97,152.67	\$ -		\$ -
May	\$ 122,808.15	\$ -		\$ -
June	\$ 104,797.23	\$ -		\$ -
Total	\$ 1,223,128.44	\$ 25,070.21	\$ 736,912.33	\$ 10,771.41

Over last year

Over Budget

AUTHORITY REVENUE REPORT January 2018

2017/2018 2018/2019

Franchise Fee Actual Annual Budget/Month Budget/Year

\$ 24,243.50 \$ 290,922.00

	2017/2018	Comparison FY 18/19-FY 17/18	2018/2019	Over/(Under) Budget
July	\$ 24,594.00	\$ 398.00	\$ 24,992.00	\$ 748.50
August	\$ 22,628.00	\$ 3,686.00	\$ 26,314.00	\$ 2,070.50
September	\$ 24,003.00	\$ 6,668.00	\$ 30,671.00	\$ 6,427.50
October	\$ 22,699.00	\$ 6,002.00	\$ 28,701.00	\$ 4,457.50
November	\$ 21,921.00	\$ 6,074.00	\$ 27,995.00	\$ 3,751.50
December	\$ 22,566.00	\$ 4,556.00	\$ 27,122.00	\$ 2,878.50
January	\$ 20,591.00	\$ 5,141.00	\$ 25,732.00	\$ 1,488.50
February	\$ 22,030.00	\$ -		\$ -
March	\$ 21,197.00	\$ -		\$ -
April	\$ 22,923.00	\$ -		\$ -
May	\$ 23,040.00	\$ -		\$ -
June	\$ 23,586.00	\$ -		\$ -
Total	\$ 271,778.00	\$ 32,525.00	\$ 191,527.00	\$ 21,822.50

Over last year

Over Budget

February 4, 2019

Mr. Tedd Ward, Director
Del Norte Solid Waste Management Authority (Authority)
1700 State Street
Crescent City, CA 95531

RE: FINAL POSTCLOSURE MAINTENANCE PLAN UPDATE
CRESCENT CITY LANDFILL, DEL NORTE COUNTY, CALIFORNIA

Dear Mr. Ward:

In my role as County Engineer, I have reviewed the existing Final Postclosure Maintenance Plan (FPMP) and associated amendment prepared by Brown, Vence & Associates (BV&A) dated November 1995 and May 2005, respectively, for the Crescent City Landfill (Landfill) as part of the permit review process mandated by the Del Norte County Local Enforcement Agency (LEA) and California Department of Resources Recycling and Recover (CalRecycle). I have also reviewed the update of this Final Postclosure Maintenance Plan as prepared by EBA Engineering (EBA) in June of 2013. The purpose of my review was to evaluate the existing plans to determine the need for potential modifications and/or additions based on current site conditions and requirements set forth in Title 27 of the California Code of Regulations (27CCR). Generally, I found these documents to be compliant with the postclosure maintenance requirements stipulated in 27CCR and revealed no basis for substantive changes, with the exception of updating miscellaneous monitoring and contact information that has changed since the previous submittals and to update the postclosure maintenance cost estimate. The following sections summarize the noted revisions.

WATER MONITORING

The existing FPMP was developed under Monitoring and Reporting (M&RP) No. 94-135 as issued by the Regional Water Quality Control Board, North Coast Region (RWQCB) on December 8, 1994. That permit has since been replaced by M&RP No. 97-90. Since adoption of M&RP No. 97-90, the groundwater monitoring network has increased from ten to seventeen monitoring wells. As part of the Authority's efforts to appeal and potentially reduce the threat/complexity rating for the landfill that resulted in a relatively high annual Waste Discharge Requirements permit fee, the Authority installed two new groundwater monitoring wells (E-4 Shallow and E-4 Deep). Recent semi-annual monitoring reports prepared by Lawrence & Associates strongly recommend that the Authority continues to monitor these wells during each groundwater sampling event until the Regional Water Quality Control Board updates the Monitoring and Reporting requirements for this facility. For this reason, nineteen groundwater wells are included in the attached calculations assessing post-closure maintenance and monitoring costs.

Conversely, in February 2015, the Authority's Notice of Termination for monitoring stormwater at the Crescent City Landfill was accepted by the Regional Water Quality Control Board, eliminating those annual costs. Similarly, groundwater monitoring and reporting frequency had been reduced from quarterly to semi-annual. Minor changes have also occurred for leachate, and surface water monitoring. Please refer to Figure (Attachment 1) for an updated site plan illustrating the various water monitoring locations. Table 1 (Attachment 2), in turn,

provides an updated monitoring schedule that summarizes the respective monitoring and reporting frequencies and scope of field/laboratory testing required under M&RP No. 97-90.

GAS MONITORING

Since preparation of the existing FPMP, the gas monitoring network has been expanded to include seventeen gas monitoring points (GMP-1 through GMP-17), in addition to eight gas compliance wells. The gas compliance wells are monitored and reported on a quarterly basis in accordance with 27CCR, 520933 and 520934. Although the gas monitoring points are not part of the Landfill's 27CCR monitoring network, they are monitored in the same manner and at the same frequency as the gas compliance wells. Please refer to Figure (Attachment 1) for an updated site plan illustrating the various gas monitoring locations and Table 1 (Attachment 2) for the corresponding monitoring schedule that summarizes the respective monitoring and reporting frequencies.

In addition to the aforementioned gas monitoring network, the Landfill is equipped with a passive gas venting system. This system consists of 47 surface vents that are interconnected via an underground conveyance piping network. The locations of the respective surface vents are shown on Figure 3 (Attachment 1).

INSPECTIONS

An updated inspection schedule is presented as Table 2 (Attachment 2). This schedule integrates the inspections currently described in the existing FPMP with the required inspections and frequencies stipulated in M&RP No. 97-90. The updated schedule also provides descriptions for the various types of inspections and the corresponding reporting frequencies.

CONTACT INFORMATION

Table 3 (Attachment 2) provides updated contact information for the various references outlined in the existing FPMP and the associated Emergency Response Plan (ERP). The nature of the information provided includes responsible parties, emergency response contacts and notifications for fires, explosions and/or other qualifying incidents, and regulatory notifications. Also provided are names and telephone numbers for the acquisition of emergency response equipment.

POSTCLOSURE MAINTENANCE COST ESTIMATE

The postclosure maintenance cost estimate presented in the existing FPMP was reviewed and updated as appropriate to account for any changes that have occurred and to generate costs for implementation in 2018 dollars. Costs were developed based on relevant experience, recently bid projects of similar scope, cost quotations from vendors, and RS Means cost data (2018). An Eastin Bill cost estimate worksheet and supporting spreadsheet are enclosed in Attachment 3. As presented in Attachment 3, the updated annual cost for postclosure maintenance is \$156,000, which equates to a total postclosure maintenance cost of \$2,964,000 for the remaining 19 years of the postclosure maintenance period. The updated annual cost is more than the previous annual cost estimate of \$96,225 when adjusted for inflation (\$101,726). The reason for the increase can be attributed primarily to the increased costs associated with vegetation control, increased number of groundwater monitoring locations, and updated equipment costs.

Enclosures:

Attachment 1 - Figures

Attachment 2 – Tables
Attachment 3 – Postclosure Maintenance Cost Projections

REFERENCES

EBA Engineering, June 2013, 'Final Postclosure Maintenance Plan Update Crescent City Landfill, Del Norte County, California'

Lawrence & Associates, November 2018, 'First-Half 2018 Water Quality Monitoring Report for Crescent City Landfill'; Prepared for Del Norte Waste Management Authority by Lawrence & Associates, Shasta Lake, California.

Brown, Vence & Associates, November 1995, Crescent City Landfill Final Closure and Postclosure Maintenance Plan; Prepared for Del Norte Waste Management Authority by Brown, Vence & Associates, Roseville, California.

Brown, Vence & Associates, May 9, 2005, Crescent City Landfill Final Closure and Postclosure Maintenance Plan, Amendment One; Prepared for Del Norte Waste Management Authority by Brown, Vence & Associates, Roseville, California.

RS Means, 2018, Site Work & Landscape Cost Data, on-line edition.

ATTACHMENT 1
FIGURES

ATTACHMENT 2

TABLES

TABLE 1

**ENVIRONMENTAL MONITORING SCHEDULE
CRESCENT CITY LANDFILL**

Groundwater (1)			
Identification	Monitoring Frequency	Field/Laboratory Testing	Reporting Frequency
Shallow wells: W1 S, W3S, WE4S, W6ES, W8S, W9S, W10S, WE1S, WES, SM7	Semi-Annual	Depth to Water: All Wells (shallow, marsh layer and deep)	Semi-Annual
Marsh Layer Wells: SM6, W6WD	Semi-Annual	Laboratory Testing: All Wells (shallow, marsh layer and deep) Volatile Organic Compounds, Chemical Oxygen Demand, Total Dissolved Solids, ICAP Metals, Nitrate, Bicarbonate Alkalinity, Carbonate Alkalinity, Hardness, Potassium, Fluoride, Total Alkalinity, Sulfite	Semi-Annual
Deep wells: W1D W2D W9D WE1D WE2D WE3D WE4D	Semi-Annual		Semi-Annual
Surface Water (1)			
Identification	Monitoring Frequency	Field/Laboratory Testing	Reporting Frequency
S-1, S-2 (or S-2B), S-3	Nov / Jan / Mar	Turbidity, Chemical Oxygen Demand, Acetone, Total Petroleum Hydrocarbons Settleable Solids, Nitrate-Nitrogen, ICAP Metals	Semi-Annual
Storm Water (1)			
Identification	Monitoring Frequency	Field/Laboratory Testing	Frequency
SW-3, SW-8, SW-20	N/J/M	Flowrate, Turbidity, Chemical Oxygen Demand, Settleable Solids, Flowrate, Nitrate-Nitrogen	Not applicable since Notice of Termination in March 2015
Leachate			
Identification	Monitoring Frequency	Field/Laboratory Testing	Reporting Frequency
L-1, L-2, L-3	Semi-Annual	Depth to Water: L-1, L-2, L-3 Laboratory Testing: L-3 Volatile Organic Compounds, Chemical Oxygen Demand, Total Dissolved Solids, ICAP Metals, Nitrate, Bicarbonate Alkalinity, Carbonate Alkalinity, Hardness, Calcium, Potassium, Fluoride, Total Alkalinity, Sulfate, EPA 601/602, Biological Oxygen Demand	Semi-Annual Semi-Annual
Landfill Gas (2)			
Identification	Monitoring Frequency	Field Monitoring	Reporting Frequency
Perimeter Gas Compliance Wells: GCW-1, GCW-3, GCW4, GCW-5, GCT-7 through GCW-10	Quarterly	Methane	Quarterly
Gas Monitoring Points: GMP-1 through GMP-17	Quarterly	Methane	Quarterly

ICAP: Inductively Coupled Argon Plasma
 N/J/M: November, January, March
 (1) Per Monitoring and Reporting Program No. 97-90
 (2) Per Title 27, Sections 20932, 20933 and 20934.

TABLE 2
INSPECTION SCHEDULE
CRESCENT CITY LANDFILL

Type of Inspection	Inspection Frequency (1)	Description	Reporting Frequency (1)
Leachate Seeps	Monthly (2)	Inspect for evidence of leachate seeps.	Semi-Annual
Final Cover Integrity / Grades	Monthly (3)	Inspect final cover to identify areas of the cap damaged by settlement, subsidence, and/or erosion. Also identify areas susceptible to ponding.	Semi-Annual
Drainage System	Monthly (3)	Inspect drainage system components to identify structural damages that require repair, determine need for removal of sediment and large debris from drainage channels and sedimentation basins, and evaluate mowing and trimming needs for grass-lined ditches.	Semi-Annual
Vegetated Layer	Annual (4)	Inspect the vegetated layer to identify areas that require reseeding. Also identify fugitive plant species with deep root systems that require removal to protect final cover.	Annual
Groundwater Monitoring Wells	Semi-Annual	Inspect the condition of groundwater monitoring wells and identify the need for any repairs. Perform inspections as part of routine sampling events.	Semi-Annual
Gas Monitoring Wells	Quarterly	Inspect the condition of gas monitoring points and gas compliance wells and identify the need for any repairs. Perform inspections as part of routine monitoring events.	Quarterly
Passive Gas Vents	Annual	Inspect the condition of passive gas vents and identify the need for any repairs.	Annual
Provisional - Storm Events	Weekly	Inspect landfill for damages at least once per week during storm periods.	Semi-Annual
Provisional - Seismic Activity	Per Event	Inspect landfill for damages following seismic activity.	Semi-Annual

- (1) Per Monitoring and Reporting Program No. 97-90 and/or Final Postclosure Maintenance Plan.
- (2) Monthly between October and April.
- (3) Monthly between October and April, and once during dry season.
- (4) Annually prior to the rainy season.

TABLE 3

**RESPONSIBLE PARTIES AND EMERGENCY CONTACT INFORMATION
CRESCENT CITY LANDFILL**

FPMP Document Reference	Contact Information
Section 4.1 - Responsible Parties	Del Norte Solid Waste Management Authority Tedd Ward, Director 1700 State Street Crescent City, CA 95531 (707) 465-1100
ERP Document Reference	Contact Information
Section 1.0 - Introduction	ERP Location: Del Norte Solid Waste Management Authority 1700 State Street Crescent City, CA 95531
Section 2.2 - Fires	Fire Department: (707) 464-2421
Section 2.3 - Explosions	Fire Department: (707) 464-2421 Sheriff (707) 464-4191
Section 3.0 - Response Procedures	Notifications: Tedd Ward, Director Del Norte Solid Waste Management Authority (707) 465-1100 (business hours) (707) 954-0953 (non-business hours) Kathy Brewer, Administrative Assistant (707) 465-1100 (business hours) (707) 954-4368 (non-business hours) Fire Department: (707) 464-2421 Sheriff (707) 464-4191
Section 3.1 - Availability of Emergency Response Equipment	Del Norte County Road Department: (707) 464-7238 Hemmingsen Construction: (707) 464-3659 Ace Hardware Rentals: (707) 465-5865
Section 3.2 - Regulatory Notification	County of Del Norte, Community Development Department: (707) 464-7229 Fire Department: (707) 464-2421 Sheriff: (707) 464-4191 State of California, Department of Toxic Substances Control Toxic Substances Control Program Region 2 Site Mitigation Unit 700 Heinz Avenue, Suite 200 Berkeley, CA 94710-2721 (510) 540-2122 State of California, Department of Resources Recycling and Recovery 1001 "I" street, P.O. Box 4025 Sacramento, CA 95812 (916) 322-4027 State of California, Regional Water Quality Control Board, North Coast Region 5550 Skylane Boulevard Santa Rosa, CA 95403 (707) 576-2220

FPMP: Final Postclosure Maintenance Plan

ERP: Emergency Response Plan

ATTACHMENT 3
POSTCLOSURE MAINTENANCE
COST ESTIMATE

FINAL POSTCLOSURE MAINTENANCE
COST ESTIMATE WORKSHEET

CRESCENT CITY LANDFILL

PREPARED BY: James Barnts, Del Norte County Engineer

GENERAL SITE INFORMATION

Name of Solid Waste Landfill: Crescent City Landfill

Solid Waste Facilities Permit Number: 08-AA-0006

Facility Operator: Del Norte Solid Waste Management Authority

Site Owner: County of Del Norte

Site Location: Section 7, Township 16 North, Range I West, Humbolt Baseline and Merid

Assessors Parcel Number: 110-020-08, 110-020-043 and 110-020-069

Site Address: End of Hights Access Road off Old Mill Road, Crescent City, CA 95531

Size of Waste Management Unit (WMU): 24 acres

FINAL POSTCLOSURE MANTENANCE COSTS

Revegetation

37. Planting/Fertilizing/Mulching

- a. Area (acres) 24 acres times 10% equals 2.4 acres

Assumes 10 percent of WMU area will require annual hydroseeding and revegetation.

- b. Type of vegetation/fertilizer/mulch

Grass/Wildflower Seed + N-K-P Fertilizer + Mulch.

- c. Unit cost (\$/acre/yr)

See "Supporting Calculations Worksheet" for cost basis.

- d. Planting/fertilizing/mulching cost (\$/yr) \$28,390
(from "Supporting Calculations Worksheet')

38. Irrigation

- a. Type of irrigation system Not Applicable

No irrigation of site is performed or required.

- b. Quantity (gallon/day)
- c. Unit cost (\$/gallon) \$0.00
- d. 1--10w many irrigation days per week?
- e. Annual irrigation costs (\$/yr) \$0
{(Line 38b x Line 38c) x Line 38d} x 52 wk/yr
- f. Annual maintenance costs (\$/yr) \$0
- g. Irrigation costs (\$/yr) \$0
(Line 38e + Line 380)
- 39. Revegetation Cost Subtotal \$4,760
(\$/yr) (Line 37d + Line 38g)

Leachate Management

- 40. Does the solid waste disposal site have a liner? No
- 41. Does the landfill have a leachate collection/removal system? (e.g., leachate barrier and recovery system, dendritic system) No
 - If YES,
 - a. What type of system? Not Applicable
 - b. Annual cost of operation and maintenance of system \$0
- 42. List types of leachate (including leachate-affected water and landfill gas condensate) treatment used and that will continue to be used during closure and postclosure maintenance (e.g., discharge to sewer, on-site or off-site management).
 - a. Type of treatment (On-Site) Not Applicable
 - b. Volume/unit frequency (gallons/day)
 - c. Unit cost of treatment (\$/gallon) \$0.00
 - d. Annual costs of on-site treatment (\$/yr) \$0.00
- 43. Type of Treatment (Off-Site) Not Applicable
 - a. Volume/unit frequency (gallons/day) 0
 - b. Unit cost of treatment (\$/gallon) \$0.00

c. Annual costs of off-site treatment (\$/yr)	\$0.00
d. Other (explain)	
44. Leachate Sampling and Testing	
a. Number of samples/round	2
WMU contains three (3) leachate monitoring wells. Only one well (L-3) used for sampling purposes.	
b. Sampling costs/round (\$)	
See "Supporting Calculations Worksheet" for cost basis.	
c. Frequency of sampling per year	2
Semi-Annual	
d. Annual sampling costs (\$/yr)	
(Line 44b x Line 44c)	\$420
e. Testing costs/sample (\$)	\$800
See "Supporting Calculations Worksheet" for cost basis.	
f. Annual testing costs (\$/yr)	
(Line 44a x Line 44c x Line 44e)	\$3,200
g. Annual sampling/testing cost subtotal (\$)	
(Line 44g)	\$3,670
46. Leachate Management Cost Subtotal (\$/yr)	
(Line 41b + Line 42d + Line 43c + Line 44g)	\$3,670

Environmental Monitoring

47. Gas Monitoring Systems

a. Monitoring device(s) of principal gases	
Portable Landfill Gas (LPG) Meter	
b. Frequency of monitoring is Quarterly	
c. On-site quarterly monitoring and annual reporting costs for principal gases (\$/yr)	\$1,120
See "Supporting Calculations Worksheet" for cost basis.	
d. Annual testing costs for trace gases (\$/yr)	\$210
e. Lab costs for gas sample (\$/yr)	\$287

f. Assumed replacement frequency, of probes, in years.	20
g. Number of probes Eight (8) gas compliance wells and 17 gas monitoring points.	25
h. Installation unit cost of probes (\$)	\$1,045
Based on average well/point completion depth of 5 feet below ground surface (BGS). See "Supporting Calculations Worksheet" for cost basis.	
i. Annual replacement costs (\$/yr) (Line 47g x Line 47h) / Line 47f	\$1,306
j. Annual maintenance costs (\$/yr) See "Supporting Calculations Worksheet" for cost basis.	\$250
k. Gas monitoring subtotal (\$/yr) (Line 47c + Line 47d + Line 47e + Line 47i + Line 47j)	\$1,867
48. Unsaturated Zone Monitoring	
Is the unsaturated zone monitored at this landfill?	No
If YES,	
a. What type of monitoring procedures and equipment are utilized? (e.g., vacuum/pressure lysimeter)	
b. How many monitoring devices are utilized?	
c. Annual sampling costs (\$/yr)	\$0
d. Annual testing costs (\$/yr)	\$0
e. Assumed replacement frequency, of devices, in years.	Not Applicable
f. Installation unit cost of devices. (\$)	\$0
g. Annual replacement cost (\$/yr) (Line 48b x Line 48f) / Line 48e	\$0
h. Annual maintenance costs (\$/yr)	Not Applicable
i. Unsaturated zone monitoring subtotal (\$/yr) \$0 (Line 47c + Line 47d + Line 47i + Line 47j) \$3,190	

49. Groundwater Monitoring

Number of wells

a.	Samples / round	19	
b.	Frequency of monitoring, per year	2	
	Semi-Annual		
c.	Analytical methods		\$ 650
	Per Monitoring & Reporting Program No. 97-90.		
d.	Testing costs/sample (\$)		\$105
	See "Supporting Calculations Worksheet" for cost basis.		
e.	Annual groundwater testing costs (\$/yr)		
	(Line 49a x Line 49b x (Line 49c + Line 49d))		\$28,690
Surface water Monitoring			
	Number of sample points	3	
f.	Samples / round	3	
g.	Frequency of monitoring, per year	3	
	November, March, August		
h.	Analytical methods		\$ 500
	Per Monitoring & Reporting Program No. 97-90.		
i.	Testing costs/sample (\$)		\$44
	See "Supporting Calculations Worksheet" for cost basis.		
j.	Annual surface water testing costs (\$/yr)		
	(Line 49f x Line 49g x (Line 49h + Line 49i))		\$1,632
k.	Annual sampling costs (Line 49e + Line 49j)		\$30,322
l.	Water level monitoring		\$350
	See "Supporting Calculations Worksheet" for cost basis.		
m.	Annualized cost for Constituent of Concern Monitoring (Line 49p)		\$2,330
n.	Annualized well replacement cost (Line 49n)		\$7,600
	Based on 4" well with average completion depth of 35 feet BGS.		
	See "Supporting Calculations Worksheet" for cost basis.		
o.	Annual groundwater well maintenance		\$7,280
p.	RWQCB Permit Fee		\$30,625
q.	Annual Engineering / Reporting costs (\$/yr)		\$18,850
	See "Supporting Calculations Worksheet" for cost basis.		

50. Environmental Monitoring Cost Subtotal (\$/yr)

(Line 49e + Line 49j + Line 49p + Line 49n + Line 49o + 49p + 49r) **\$ 97,000**

Drainage Maintenance

51. Maintenance of vegetation and surface drainage structures twice annually
See "Supporting Calculations Worksheet" for cost basis.

a. Annual Drainage Maintenance Cost Subtotal (\$/yr) **\$ 9,400**

Security

52. Estimated annual maintenance fencing, lock and gate maintenance costs (\$/yr) **\$1,500**

Inspection

53. What will be the routine maintenance inspection frequency of the landfill during postclosure (minimum semi-annually)?

Per Monitoring & Reporting Program No. 97-90.

a. Number of inspections per year **9**

Monthly during the period of October through April, and once in July.
Weekly during storm periods. Assume four weekly inspections per year.

b. Inspection unit cost (\$) **\$200**

c. Annual Inspection Cost Subtotal during the Postclosure
Care Period? (\$/yr) **\$1,800**

Components that should be inspected include, but are not limited to:

- o Final cover - erosion damage, vegetative impacts, etc.
- o Final grading - ponding caused by settlement
- o Drainage control systems - continuity of articulated drains, sediment choked conduits
- o Passive LFG control system components, security gates and berms/side slopes, Vectors, and fire control monitoring equipment

Supplemental Data

54. Itemize annual costs, on additional worksheets, for monitoring and postclosure maintenance procedures, specific to this solid waste disposal site, and attach at the end of this worksheet. Make sure each page is appropriately labeled with site name and SWIS number.

Other- Annual Postclosure Maintenance Costs

\$ 7,464

See "Supporting Calculations Worksheet" for cost basis.

SUMMARY OF FINAL POSTCLOSURE COST ESTIMATES
CRESCENT CITY LANDFILL

Facility Name	Crescent City Landfill	SWIS #	08-AA-0006
---------------	------------------------	--------	------------

Monitoring and Postclosure Maintenance Cost

Revegetation (Line 37)	\$28,390
Revegetation (Section 39)	\$ 4,760
Leachate Management (Section 46)	\$4,090
Gas Monitoring (Section 47)	\$3,190
Groundwater Monitoring (Section 50)	\$97,000

Drainage Maintenance (Line 5 la)	\$ 9,400
Security (Section 52)	\$1,500
Inspection (Section 53)	\$1,800
Supplemental Costs (Section 54)	\$ 7,464
Total Annual Cost	\$156,000
Total Annual Cost x 19 years	\$ 2,964,000

October 4, 2018

Mr. Tedd Ward, Program Manager
Del Norte Solid Waste Management Authority (Authority)
1700 State Street
Crescent City, CA 95531

**RE: CORRECTIVE ACTION PLAN COST ESTIMATE
FOR NON-WATER RELEASES
CRESCENT CITY LANDFILL, DEL NORTE COUNTY,
CALIFORNIA EBA JOB No. 13-1902 (TASK A2)**

Dear Mr. Ward:

This report has been prepared to comply with the financial assurance assessment requirements mandated by Title 27 of the California Code of Regulations (27CCR), §22100 to establish costs for initiating and completing known or reasonably foreseeable corrective actions for a non-water release from the Crescent City Landfill (Landfill) associated with a causal event. Causal events include, but are not limited to, earthquakes, flooding, tsunamis, seiches, fire, precipitation and degradation of inadequate containment structures or environmental monitoring or control systems. Per 27CCR, the non-water release corrective action cost estimate can be established using one of three options. These options are: 1) assuming a corrective action cost that is equal to the closure cost estimate for the Landfill; 2) assuming a corrective action cost that is equal to the cost for replacement of the final cover; or 3) development of costs based on a site-specific corrective action plan (CAP). In the case of the Landfill, the cost to implement either Option 1 or 2 would be approximately \$3.5 and \$2.8 million, respectively, in current dollars. In light of the significant cost for both of these options, the corrective action cost estimate was developed based on a site-specific CAP.

This CAP was developed in accordance with the requirements specified in 27CCR, §22102(a) and includes three (3) primary components. These components include the following:

- An assessment of the known or reasonably foreseeable impacts due to causal events and the costs to remediate such impacts. The causal events that were assessed included earthquake, flooding, tsunami, seiche, fire and precipitation;
- An evaluation of the long-term performance of the final cover system to ensure that it will continue to meet the requirements of 27CCR, 21140 without the need for corrective action; and
- Provisions to restore, as applicable, the integrity or establish the adequacy of a damaged or inadequate containment structure or environmental monitoring or control system, to bring the Landfill into compliance with the applicable requirements.

Technical guidance documents prepared by the California Department of Resources Recycling and Recovery (CalRecycle) provide best management practices (BMPs) for use in developing cost estimates for corrective action in the CAP. In general, the BMPs provide criteria for when a causal event is not considered reasonably foreseeable. If site-specific conditions for a particular causal event comply with the corresponding BMP(s), then development of a corrective action cost estimate for that causal event is not required. Conversely, non-compliance with a BMP requires the development of a corrective action cost estimate. The BMPs identified by CalRecycle were used in the development of this CAP and are identified accordingly in the respective subsections presented herein.

As stipulated in 27CCR, §22102(c), the CAP must be prepared and certified by a third party that is not currently employed by the current entity responsible for the design of the landfill in question. In this regard, the County Engineer has not been involved in the design of the Landfill and therefore satisfies this third party requirement.

BACKGROUND INFORMATION

The Landfill is a closed Class III facility located on Hights Access Road approximately 2.25 miles north of Crescent City, California (see Figure 1, Attachment 1). The Landfill's waste management unit (WMU) occupies approximately 23 acres of a 167-acre parcel owned by the County of Del Norte. The Landfill site was previously used as an open burn dump prior to being permitted as a sanitary landfill in 1977. The sanitary landfill operations occurred over the period of 1997 through March 2005. The refuse composition is comprised primarily of household and commercial waste, and construction debris. Other types of waste handled or disposed of at the site include asbestos containing materials, dead animals, clean wood waste, household appliances, seafood processing waste, sewage sludge, commercial sewage (septage), and cheese whey. The Landfill was formally closed in two phases (Phases 1 and 2). Phase 1, which was conducted while the facility was still active, encompassed approximately 9.4 acres in the southern portion of the Landfill and was completed in 1996. Phase 2 encompassed the remaining central and northern portions of the Landfill following the cessation of site operations and was completed in February 2006.

ASSESSMENT OF CAUSAL EVENTS

The following subsections present an assessment of the primary causal events identified in 27CCR, §22100 and §22102. The applicability of each causal event is described based on the BMP criteria developed by CalRecycle. Also provided are corrective action cost estimates for those causal events that are determined to represent reasonably foreseeable occurrences.

Earthquake

The earthquake BMP causal event requires an assessment of damage to the landfill that could occur based on the following criteria:

- The maximum credible earthquake (MCE);
- The landfill is located within a Seismic Hazard Zone; and
- The landfill is located within 200 feet of a Holocene fault.

An earthquake is a reasonably foreseeable causal event for the Landfill. In general, earthquakes are capable of causing damage to landfills and ancillary features due to strong ground shaking, liquefaction and/or fault rupture. Engineering standards and geologic hazard mapping are used to design landfills to withstand strong ground movement and to prevent the building of structures over known active faults. In accordance with 27CCR, a Class III landfill must be designed to withstand the seismic shaking associated with the Maximum Probable Earthquake (MPE). The MPE is defined as the maximum earthquake that is likely to occur within a 100-year period. Class II landfills must be designed to withstand the MCE. The MCE is commonly a larger event than the MPE and is defined as the maximum earthquake capable of occurring under the currently known geologic framework.

As previously noted, the Landfill was closed in two phases. The final cover system for Phase 1 is described by Brown, Vence & Associates, Inc. (BV&A, 1995) as consisting, from top to bottom, (1) 18-inch (side slopes) to 24-inch (top slopes) thick soil cover/vegetated layer, (2) 6-inch thick gravel drainage layer overlain by geotextile filter fabric (side slopes only), (3) 60-mil high-density polyethylene (HDPE) smooth (top area) and double textured (side slopes) geomembrane sheet, and (4) 24-inch thick soil foundation layer. The Phase 2 final cover system as described by Vector Engineering (2005) is generally the same, except a geonet composite drainage layer was installed in lieu of the 6-inch thick gravel drainage layer.

A final cover stability analysis is presented in the Landfill's Final Closure and Postclosure Maintenance Plan, Amendment One, dated May 2005 (BV&A, 2005). The stability evaluation was conducted by Vector Engineering (2005). Vector Engineering (2005) reports the Landfill's final cover is designed using seismic standards of a 10 percent probability of exceedance in 50 years resulting in a peak ground acceleration of 0.33g. Strong ground motion is anticipated at the Landfill associated with a magnitude 6 earthquake associated with faults approximately 24 kilometers (km)(15 miles) off shore. Expected permanent displacements of less than 8 centimeters (cm)(3 inches [in]) were calculated for the final cover configuration.

Generally, industry practice considers displacements on the order of 15 cm (6 in) to 30 cm (12 in) to be acceptable for geosynthetic base liners. Because damage to final cover systems from seismic events can be repaired, displacements from 30 cm (12 in) to 90 cm (35 in) are

typically considered acceptable (Kavazanjian, 1999).

Vector Engineering (2005) states that the closest faults are located approximately 24 km west of the site. EBA's review of Alquist-Priolo Earthquake Fault Zone Maps confirms the Crescent City Landfill is not located within a Seismic Hazard Zone or within 200 feet of a Holocene fault.

MCE Element

In order to assess the MCE BMP for the Landfill, EBA performed a probabilistic MCE analyses using United States Geological Survey (USGS) 2002 and 2008 procedures.

Probabilistic MCE evaluations using the USGS 2002 method for a return period of two percent in 50 years predicts the Landfill site will experience peak horizontal ground accelerations of 0.64g (see "USGS 2002 Analysis", Attachment 2). A probabilistic MCE analysis using the USGS 2008 method for a return period of two percent in 50 years results in a peak horizontal ground acceleration of 0.71g at the site (see "USGS 2008 Analysis", Attachment 2). These ground accelerations are consistent with the USGS 2008 Probabilistic Seismic Hazard Analysis map for the western United States (Revision III, January 2010, see Attachment 2), which indicates the Landfill site will experience peak horizontal ground accelerations that range from 0.67g to 0.89g. A deterministic evaluation indicates the Cascadia Subduction Zone approximately 25 km (16 miles) west of the site is capable of producing a MCE of a moment magnitude (Mw) 8.0 to Mw 8.5 (Mualchin, 1996).

Based on these data, the MCE will generate peak ground motions at the Landfill site ranging from a low of 0.64g to a high of 0.71g.

EBA analyzed the predicted permanent horizontal displacement in the final cover system using the same approach and methods used by Vector Engineering (2005) but substituting the MCE input values. Input values for the critical cross-section include a yield acceleration (Ky) of 0.21g and a peak horizontal ground acceleration at the site (Kmax value) of 0.71g. The results indicate permanent displacements are predicted to range from 70 cm (28 in) for Mw = 8.0 (median) to 180 cm (71 in) for Mw = 8.0 (16 percent probability of exceedance). We believe the estimated range is reasonable for a MCE event of Mw 8.0 to Mw 9.0 occurring on the Cascadia Subduction Zone.

These displacements are likely to cause significant damage to the final cover system, as well as partial damage to the passive landfill gas (LFG) collection system, drainage system, and perimeter/access roads. Damage to the cover system is likely to be greatest at the top of slopes, as these are areas of greatest stress and have historically been the location of damage at landfill sites due to strong earthquake ground motions. The following considerations and assumptions were used to evaluate corresponding corrective action costs:

- The MCE event will conservatively cause 3,350 lineal feet of tearing to the WMU's

geomembrane/geocomposite cover along the entire top slope crest. We have also assumed an average 153 cm (5-foot) displacement along a tear and a minimum of 10 feet of additional repair will be required on each side of the tear. This results in a total of approximately 25 feet of geosynthetic repair per linear foot of tear in the final cover. Therefore, the area of final cover system repair in the WMU is estimated to be 83,750 square feet;

- Partial damage to the passive LFG collection system components (i.e., surface vents, underground conveyance piping, etc.) may occur that would require repair or replacement and will equal ten percent of the entire system installation cost in current dollars;
- Repair or replacement of damaged surface drainage system components (i.e., drainage ditches, drainage berms, downslope drains, culverts, drop inlets, etc.) may be required and will equal 20 percent of the final closure drainage system construction costs in current dollars; and
- Partial damage to perimeter/access roads could occur that would require repair. Similar to the above scenario, it is assumed that repairs will be required for 20 percent of the perimeter/access roads.

Table 1 below provides a summary of the corresponding corrective action costs based on the aforementioned assumptions. Unit costs used in the estimate are based on a combination of previous cost estimates adjusted for inflation, prices provided by local vendors, recent bids from similar projects, and cost data published by RSMeans (2013):

**TABLE 1
CORRECTIVE ACTION COSTS FOR
MAXIMUM CREDIBLE EARTHQUAKE (NICE) CAUSAL EVENT**

Description	Quantity	Unit Cost	Extended Cost
Final Cover System Repair			
Foundation Layer	9,720 CY	\$151	\$145,800
Geosynthetic Membrane Liner	83,750 SF	\$0.70	\$58,700
Geonet Composite Drainage Layer	83,750 SF	\$0.95	\$79,600
Soil Cover/Negetated Layer	7,280 CY	\$15W	\$109,200
Revegetation	2.3 AC	\$4,215	\$9,700
Passive LFG Collection System Repairs	Lump Sum	\$29,800	\$29,800
Damaged Surface Drainage System Repairs	Lump Sum	\$33,800	\$33,800
Perimeter/Access Road Repairs	11,380 SF(2)	\$2.25	\$25,600
Construction Quality Assurance and Reporting	Lump Sum	\$30,000	\$30,000
		Total:	\$522,200

(1): Assumes soil will have to be imported from an off-site source.

(2): Based on total perimeter, access road area of approximately 56,900 SF multiplied by 20 percent.

Flooding

The BMP for a flooding causal event is an area that is not located within a 500-year flood zone or the lowest elevation of the landfill perimeter is higher than the predicted elevation of the 500-year flood. In this regard, a deterministic flood scenario has not been developed by the Federal Emergency Management Agency [FEMA] for the Landfill area to establish a predicted elevation for a 500-year flood. A copy of the corresponding FEMA Flood Insurance Rate Maps (FIRMs; note that two FIRMs have been combined into a single figure as the Landfill property extends across two separate FIRM panels) for the area is enclosed in Attachment 3. In the absence of published 500-year flood information, a qualitative assessment was performed based on the elevation of the Landfill as compared to the 100-year flood boundary published by FEMA. As shown on the FIRMs (Attachment 3), the Landfill is located approximately 0.3 miles from the closest segment of the flood boundary. Furthermore, the WMU ranges from approximately 17 to 47 feet higher in elevation than the estimated 100-year floodwater elevation (i.e., 30 to 60 feet mean seal level [MSL] versus 13 feet MSL). This elevation difference significantly exceeds floodwater elevations that could reasonably be expected for a 500-year flood event. Based on these circumstances, a

corrective action cost estimate was not developed for a flooding scenario as it is not considered to represent a reasonable foreseeable causal event.

Tsunami

The BMP for a tsunami causal event is an area that is not designated to be prone to inundation by a tsunami by the State of California, Department of Conservation (SCDC) or local emergency response agency. A tsunami inundation map maintained on the SCDC website for the Crescent City Quadrangle indicates that susceptible inundation areas do not encompass the Landfill. A copy of this map is enclosed in Attachment 4. As shown on the map, the closest tsunami inundation area encroaches to within approximately 0.3 miles of the Landfill to the northeast. Since the Landfill is not susceptible to inundation by a tsunami, a tsunami is not considered a reasonable foreseeable causal event. Based on this circumstance, a corrective action cost estimate was not developed for this scenario.

Seiche

The BMP for a seiche causal event is an area that is located more than one-half mile from a lake or a landlocked bay. The closest lake near the Landfill corresponds to Dead Lake, which is located approximately one-half mile to the southwest. While this distance is equal to the minimum BMP setback, the lake and Landfill are separated by a series of sand dune deposits that create a topographic ridge. This topographic feature would serve to protect the Landfill against any seiche activity derived from Dead Lake. Lake Earl is located approximately one mile northeast of the Landfill, which exceeds the BMP criterion. However, an adjoining slough could potentially allow the surging of water from Lake Earl to encroach the wetland area east and adjacent to the Landfill. With that being said, the WMU is located at a higher elevation than the adjoining wetland area, thereby minimizing any potential for damage related to a seiche. Finally, Pelican Bay is also situated in proximity of the Landfill to the northwest, but is located at a distance exceeding the BMP criterion and is separated by higher elevations. Based on these circumstances, a corrective action cost estimate was not developed for a seiche scenario as it is not considered a reasonable foreseeable causal event.

Fire

Fires at a landfill are considered to represent a reasonable foreseeable event and can occur either as a wildfire or subsurface fire. Further details regarding these two types of causal events and associated corrective action costs are presented below.

Wildfire Element

Corrective action costs related to a wildfire causal event were evaluated based on the magnitude of the potential fire threat, wind conditions, physical site features, and the nature of the combustible surface structures within the affected area. Pertinent details regarding these considerations are as follows:

- A fire threat map prepared by the California Department of Forestry and Fire Protection, Fire and Resource Assessment Program (CDF-FRAP) for Del Norte County identifies the Landfill as being located in a "moderate" Fire Hazard Severity Zone. A copy of this map is enclosed in Attachment 5.
- Surface wind records maintained by WeatherSpark.com (2013) indicate that winds in the Crescent City area are from the south-southeast and north-northwest approximately 29 and 25 percent of the time, respectively. Winds are calm approximately 27 percent of the time; and
- Structures/components within and near the WMU that are potentially vulnerable to a wildfire include: surface vents associated with the passive LFG collection system; LFG monitoring points; LFG compliance wells; groundwater monitoring wells; and downslope drains. In addition, vegetative cover material would also be subject to damage.

Based on the predominant wind direction (from the south-southeast), the occurrence of a wildfire along the southern and southeastern portion of the WMU is considered to represent the most plausible scenario for a wildfire incident. Since the Landfill is located in a "moderate" Fire Hazard Severity Zone, the corresponding BMP stipulates a baseline assumption that 25 percent of the combustible surface structures within a 2(X)-foot zone at or near the landfill cell boundaries are destroyed. A map illustrating this area is enclosed in Attachment 5. The corresponding corrective action costs based on this criterion are presented in Table 2. Unit costs used in the estimate are based on a combination of prices provided by local vendors, recent bids from similar projects, and cost data published by RSMeans (2013):

**TABLE 2
CORRECTIVE ACTION COSTS FOR WILFIRE CAUSAL EVENT**

Description	Quantity	Unit Cost	Extended Cost
LFG Collection System — Surface Vents	24 each	\$1,400	\$33,600
LFG Monitoring Points (10 probes @5 feet)	50 VLF	\$90	\$4,500
LFG Compliance Well (1 well @ 5 feet)	5 VLF	\$90	\$450
Groundwater Monitoring Wells			
• Properly Destroy Damaged 2" Wells (3 wells @ 10-45 feet)	81 VLF	\$120	\$9,720
• Install Replacement 2" Wells (3 well @ 10-45 feet)	81 VLF	\$165	\$13,370
Downslope Drains (12" CMP)	1,410 LF	\$35	\$49,350
Revegetation	9.9 AC	\$4,215	\$41,730
		Subtotal	\$152,720
25 Percent Baseline Assumption			\$38,180

LFG: Landfill Gas
 CMP: Corrugated Metal Pipe
 VLF: Vertical Lineal Feet

LF: Lineal Feet
 AC: Acres

Subsurface Fire Element

Subsurface fires are typically caused by the overdraw of a LFG collection system, which introduces excess oxygen into the refuse mass, thereby causing rapid oxidation of the organic waste component. In this regard, the WMU is equipped with a passive LFG collection system, which reduces the potential for significant and/or prolonged influxes of oxygen into the waste. In addition, the geomembrane liner component associated with the WMU's final cover system provides farther protection against appreciable oxygen intrusion. Based on these provisions, the likelihood of a subsurface fire occurring at the Landfill is remote. As a result, a corrective action cost estimate was not developed for a subsurface fire scenario as it is not considered a reasonable foreseeable causal event.

Precipitation

The BMP for a precipitation causal event is the 1,000-year, 24-hour storm event. Based on precipitation frequency estimates developed by the National Oceanic and Atmospheric Administration (NOAA), the precipitation total for a 1,000-year, 24-hour storm event in the Landfill area is 12.4 inches. Please refer to Attachment 6 for supporting documentation.

The surface water management systems for the Landfill's final cover are designed and sized to accommodate a 100-year, 24-hour storm event as required by 27CCR, §20365. The corresponding precipitation total for such a storm event is 9.61 inches. Since the BMP for a precipitation causal event exceeds this design criterion (12.4 inches), it is reasonable to assume that a 1,000-year, 24-hour storm event will induce partial impacts to the final cover and surface water management systems. Impacts would likely be in the form of erosion of the final cover's vegetated layer, as well as siltation and damages to ditches and collection system components. The following criteria were used to estimate the nature and extent of potential impacts:

- Twenty-five percent of the final cover slopes with grades of five percent or less will experience up to two inches of soil loss within the final cover's vegetated layer, while 50 percent of the final cover slopes with grades greater than five percent will experience up to six inches of soil loss. Repairs will require placement, regrading and/or compaction of new vegetated layer soil, and revegetation to comply with the final cover design specifications;
- Restoration of drainage ditches and berms subjected to siltation or erosion will be equivalent to the annual post closure maintenance cost for drainage maintenance/repair; and
- Replacement of damaged surface drainage system components (i.e., down slope drains, drop inlets, etc.) will be equal to ten percent of the final closure drainage system construction costs in current dollars.

Corrective action costs for implementing the aforementioned provisions are presented in Table 3. Unit costs used in the estimate are based on a combination of prices provided by local vendors, recent bids from similar projects, and cost data published by RSMeans (2013):

**TABLE 3
CORRECTIVE ACTION COSTS FOR PRECIPITATION CAUSAL EVENT**

Description	Quantity	Unit Cost	Extended Cost
Final Cover Repair (slopes percent)			
• New Vegetated Layer Soil	645 CY"	\$155)	\$9,680 of
• Placement Revegetation	2.4 AC')	\$4,215	\$10,120
Final Cover Repair (slopes >5 percent)			
• Placement of New Vegetated Layer Soil	5,160 CY(3' ⁴	\$15.	\$77,400
• Revegetation	6.4 AC(3)	\$4,215	\$26,980
Restoration of Drainage Ditches, Berms	Lump Sum	\$11,100	\$11,100
Replacement of Damaged Collection System Components	Lump Sum	\$16,900	\$16,900
Construction Quality Assurance and Reporting	Lump Sum	\$10,000	\$10,000
		Extended Total:	\$162,180

CY:Cubic Yards

AC:Acres

- (1): Area based on 9.5 acres multiplied by 25 percent (i.e., adjusted acreage).
- (2): Volume based on placement of two inches of new vegetated layer soil over adjusted acreage.
- (3): Area based on 12.7 acres multiplied by 50 percent (i.e., adjusted acreage).
- (4): Volume based on placement of six inches of new vegetated layer soil over adjusted acreage.
- (5): Assumes soil will have to be imported from an off-site source.

EVALUATION OF FINAL COVER SYSTEM

The final cover system for the Landfill is comprised of engineered alternatives to the prescriptive standard in accordance with 27CCR. The engineered alternatives were formally approved by the governing regulatory agencies and the corresponding final cover systems installed in 1996 (Phase 1) and 2006 (Phase 2). Based on EBA's review of the final cover system designs presented in the *Final Closure and Postclosure Maintenance Plan* (BV&A,

1995) and *Final Closure and Postclosure Maintenance Plan, Amendment One* (BV&A, 2005), it is EBA's opinion that the designs were performed within the standard of practice at those times, and that the overall design characteristics should promote long term stability. In addition, review of Local Enforcement Agency (LEA) inspection reports made available to EBA by the Authority for periodic inspections conducted since 2009 identified only one "area of concern". This corresponded to a leachate seep on the east side of the Phase 2 fill on June 2, 2009. This concern was no longer identified in subsequent inspections conducted in 2011 and 2012, nor were any other "areas of concern" identified over the same period. While some differential settlement has occurred that requires repair (personal communication with the Authority on March 15, 2013), the conditions are considered normal for landfill surfaces and will be addressed as part of routine postclosure maintenance. In light of these findings, EBA finds no basis for incorporating additional costs to this CAP for the purpose of enhancing the potential long-term performance of the final cover system.

EVALUATION OF CONTAINMENT & MONITORING/CONTROL SYSTEMS

EBA reviewed available documentation to evaluate the adequacy of the design, capacity and component useful life of the containment/environmental monitoring and control systems. Documentation included the Landfill's Final Closure and Postclosure Maintenance Plan (BV&A, 1995) and Feasibility Study for Corrective Action Program (Winzler & Kelly Consulting Engineers, 2003). Overall, the Landfill's detection monitoring systems appear to be compliant with 27CCR. In addition, interviews with Authority staff and review of LEA inspection reports indicate that the various system components are generally in satisfactory condition and do not require replacement. While the Authority noted that minor repairs or upgrades are necessary for selected monitoring points (personal communication on March 26, 2013), the types of issues are consistent with regular maintenance and wear that are addressed as part of postclosure maintenance. In regards to containment, the Landfill is not equipped with a leachate collection and removal system (LCRS), so no containment structures are present on-site that require evaluation. Based on these circumstances, EBA finds no basis for incorporating additional costs to this CAP for the purpose of upgrading the Landfill's control and detection monitoring systems.

SUMMARY OF CORRECTIVE ACTION PLAN COST ESTIMATES

As presented in the previous sections, the qualifying causal events for establishing a corrective action cost for a non-water release from the Landfill include an earthquake (MCE), a wildfire, and a 1,000-year, 24-hour precipitation event. The corrective action costs for these causal events range from \$38,180 to \$522,200, with the MCE event representing the highest of the qualifying scenarios. There are no applicable corrective action costs for the remaining causal events as they have been determined not to represent a reasonable foreseeable occurrence. Based on these findings, the amount of \$522,200 should be used as the basis for complying with the corrective action financial assurance requirements for a non-water release.

PREPERATION

This report was prepared and certified by the County Engineer as a service to the Authority.

Sincerely,

James Barnts
County Engineer

Enclosures: Attachment 1 – Site Plan
Attachment 2 – Earthquake Causal Event, Supporting Data
Attachment 3 – Flooding Causal Event, Supporting Data
Attachment 4 – Tsunami Causal Event, Supporting Data
Attachment 5 – Fire Causal Event, Supporting Data
Attachment 6 – Precipitation Causal Event, Supporting Data

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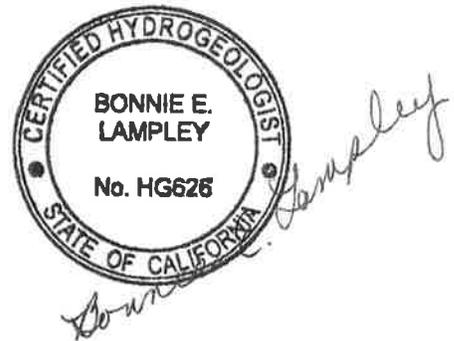
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FIRST-HALF 2018
WATER-QUALITY MONITORING REPORT
FOR
CRESCENT CITY LANDFILL

NOVEMBER 27, 2018



PREPARED FOR:

DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY
1700 STATE STREET
CRESCENT CITY, CA 95531

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- A. Field data & laboratory sheets
- B. Time-series graphs – general parameters
- C. Historical data tables (separate file)

INTRODUCTION

This document presents the first-half 2018 water-quality monitoring report for the Crescent City Landfill (Landfill), Del Norte County, California (**Figures 1 and 2**). Lawrence & Associates (L&A) prepared this report at the request of the Del Norte Solid Waste Management Authority (DNSWMA), a joint powers authority of the County of Del Norte and the only incorporated city, Crescent City. The Authority has administrative responsibility for the Crescent City Landfill, including environmental monitoring, reporting, and compliance, though the landfill and landfill property are owned by the County of Del Norte.

The Landfill, which was closed in March 2005, is monitored under Waste Discharge Requirements (WDR) Order No. 97-90, issued by the North Coast Regional Water Quality Control Board (NCRWQCB) on September 25, 1997.

In anticipation of updating the WDR, the DNSWMA proposed updates to the Monitoring & Reporting Program (MRP). To that end, L&A prepared a report (MRP Update Report) summarizing the landfill history and operations, describing the hydrogeology of the site in detail, and interpreting the historical water-quality data, and proposing changes to the MRP.¹

On September 16, 2016, the NCRWQCB issued a letter reducing the Threat/Complexity (T/C) Rating for the Landfill from 1A to 2A. The letter stated the following:

“Specifically, to maintain a 2A rating, you must continue to monitor the two nearest domestic wells, identified as 110-140-24 and 110-149-16, twice a year at the same time as the SWDS sampling. Analytes shall include, at a minimum, the general chemistry and field parameters required at the SWDS monitoring wells and volatile organic compounds U.S. EPA Method 8260, including oxygenates. Data from these wells shall be included in the regular monitoring reports. Other monitoring points may be proposed to replace sampling at the domestic wells, but are subject to review and approval by the Executive Officer of the Regional Water Board.”

DNSWMA staff has contacted the owners of the above-described wells to obtain permission to sample, but the owners declined to give permission.

Based on the analysis herein and the MRP Update Report, it is neither clear whether an additional downgradient well is necessary at this time nor where one should be located. The location of new downgradient wells may depend, in part, on the results of the residential well sampling, and on the continued monitoring of the E-4 well pair. In the MRP Update Report, we recommended evaluating the need and/or location for a new downgradient well in six months, after one more sampling event for the E-4 pair and sampling of the residential wells. The E-4 well pair was not

¹ L&A, January 13, 2016, *Proposed Updates to Monitoring & Reporting Program for Crescent City Landfill*.

sampled in either of the 2016 events, but was sampled in both 2017 events, and E-4 Shallow was sampled in first-half 2018 (E-4 Deep did not contain sufficient water for sampling in first-half 2018). The need for a new downgradient well is discussed herein, based on the results from the first- and second-half 2017 sampling. We also recommend sampling the above-described residential wells, although we understand from DNSWMA staff that the residents have indicated they do not wish to participate in any further monitoring of their wells.

SUMMARY

GROUNDWATER GRADIENT AND MOVEMENT

Figures 2 and 3 shows groundwater elevation contour maps based on combined water-level measurements made on January 22, February 12, and March 5, for the Dune (shallow) and Battery (deep) aquifers, respectively. The direction of the groundwater gradient is similar in both aquifers, generally ranging from east to southeast at magnitudes ranging from 0.006 to 0.022 feet/foot. The exception to the overall gradient direction and magnitude is at the northeastern corner of the landfill in the deep aquifer. In this area, the gradient steepens to approximately 0.071 feet/foot towards the northeast. All gradients are similar to previous periods.

GENERAL WATER QUALITY

First-half 2018 water-quality monitoring was performed by DNSWMA per WDR Order No. 97-90.

Volatile organic compounds (VOC) were not detected in any of the monitored wells in first-half 2018. The last time VOC were detected was in first-half 2017 (two detections – 0.5 µg/L of methyl tert-butyl ether (MTBE) in E-1 Shallow and 1.7 µg/L of toluene in SM-7 Shallow). Previously, MTBE was detected in E-1 at 1 µg/L (March 2014). During the March 2014 sampling event, 23 µg/L of tert-butyl alcohol (TBA) and 3.9 µg/L of acetone also were detected in E-1. The latter two compounds have not been detected in E-1-SH since 2014.

VOC were not detected in well SM-6, which contained 0.90 µg/L of toluene and 24 µg/L of benzene in the first-half 2016 sampling event. The detections of VOC in SM-6 between 2012 and 2016 were attributed to vandalism. This is supported by the decreasing trend for total dissolved solids (TDS) since closure; if landfill leachate were imparting VOC, TDS would not be expected to be decreasing. TDS is used here as an indicator of the general water quality and level of mineralization. As described in the second-half 2016 report, SM-6 was redeveloped, and the casing was extended and a locking compression cap installed to prevent surface-water inflow and vandalism.

VOC were not detected in E-4 Shallow (E-4 Deep did not contain sufficient water for sampling), the well closest to the nearest residences. Well E-4 Shallow has always been nondetected for VOC. Well E-4 Deep had previous detections, in 2014, of 0.56 µg/L of MTBE and 6.9 µg/L of TBA. In E-4 Shallow, general parameters (such as TDS, alkalinity, hardness, calcium, sodium, etc.) have shown a distinct decline in concentration over the last four years.

Therefore, based on the recent historical and current results, a new well further downgradient of the E-4 pair does not appear to be warranted at this time. It is imperative, however, that the E-4 pair be sampled during every monitoring event, even though they are not officially listed in the WDR. The need for additional wells downgradient of the E-4 pair and upgradient of the nearest residences should continue to be evaluated after every sampling event, for the foreseeable future.

Wells downgradient of the Landfill and between the Landfill and the residential area show decreasing trends for TDS since Landfill closure. The E-3 pair, W-6E, W-6W, and SM-6 all show statistically significant decreasing trends in TDS since closure.² The E-1 pair shows decreasing trends in TDS, although not statistically significant. Most of these wells have not shown VOC detections for at least the last seven years. VOC have never been detected in W-6E; VOC have not been detected in W-6W since 2001.

The only increasing trend in TDS is in crossgradient well W-2, and it is unusual, in that there is not a correlative increase in TDS in any of the downgradient wells. If the increase in TDS in W-2 was attributable to significant leachate migrating to groundwater over such a long period (almost 30 years), it would be expected that the downgradient wells would be showing increasing trends. All downgradient wells, however, are showing decreasing trends. Landfill-gas migration also does not appear to be causing this increase, as no other wells show a similar trend. The video survey of W-2, conducted in 2016, did not show damaged casing, but did show that surface-water intrusion had been occurring. L&A staff redeveloped and properly capped W-2 in 2016. Data from 2016 and 2017 suggest that this work may have been effective in slowing or stopping the increasing trends, as the concentrations of several parameters (alkalinity, bicarbonate, calcium, conductivity, hardness, magnesium, and TDS) have stabilized (see graphs in **Attachment B**).

SITE DESCRIPTION

The Landfill is located two miles north of Crescent City, in Del Norte County, on a 166-acre property (**Figure 1**). The property encompasses parcels APN 110-020-08, APN 1120-020-43, and a portion of APN 110-020-69. The property is owned by Del Norte County and zoned as a Public Facility. Current land uses within one mile of the site are recreational, wildlife habitat, agricultural, residential, and industrial. The Landfill mound comprises approximately 23 acres of the 167-acre site.

The landfill property is surrounded on three sides by land owned by the California Department of Parks and Recreation; their holdings include approximately 5,000 acres extending from Old Mill Road to the ocean, less than two miles to the west. There is a residential area consisting of sixteen properties located approximately one quarter to one half mile north-northeast of the Landfill mound (main body of waste; **Figures 2 and 3**).

² *Ibid.*

In 1996, the approximate southern half of the landfill was capped with a 60-mil coextruded geomembrane. In October 2005, the second phase of closure included capping the remaining area with a linear low-density polyethylene (LLDPE) geomembrane. Since 2005, no waste has been disposed at the Landfill.

Since 1997, groundwater-monitoring has been conducted using 17 groundwater monitoring wells, one leachate well, and three surface-water points. Two additional wells, E-4 Shallow and E-4 Deep, have been sampled but are not under MRP 97-90, as they were installed in 2014. Monitoring is conducted by DNSWMA and County staff.

Beginning in at least 1987, evidence of Landfill influence on groundwater and surface-water quality was noted. Impacts consist of periodic detections of organic compounds and elevated mineral constituents. In general, however, water quality has improved since the completion of landfill capping. This was discussed in detail in the MRP Update Report.

METHODS

SAMPLING

DNSWMA staff conducted the groundwater and surface-water sampling per the protocol recommended in a Technical Memorandum prepared in 1996 by Winzler & Kelly, and approved by NCRWQCB staff. Before sampling, the depth to water in each groundwater well was measured to the nearest 0.01 foot with an electronic well sounder.

Field parameters were measured per the Sampling and Analysis Plan; the meter was calibrated the morning of the actual testing.

Samples were shipped on ice and accompanied by appropriate chain-of-custody documentation, to North Coast Laboratories, Ltd., in Arcata, California.

HYDROGEOLOGICAL SETTING

The following discussions of the hydrogeologic setting and water quality were taken from the more detailed description in the MRP Update Report. Please refer to that report for additional information, as indicated.

STRATIGRAPHY

The Landfill site is underlain by the following geologic units, from ground surface downwards:

- Dune deposits of well-sorted, poorly consolidated, fine-grained sand. The Dune deposit is of varying thickness, depending on the ground-surface topography. In the higher elevation portions of the site, the Dune deposits can be as much as 40 feet thick (*e.g.*, as in the boring for the E-4 wells). In other areas, the Dune deposits may be less than 10

feet thick (*e.g.*, as in the boring for well W-2). Hydraulic conductivity of the Dune deposits ranges from 1.1×10^{-3} to 5.8×10^{-3} cm/sec.

- Underlying the Dune deposits is a unit characterized as the Marsh deposit. The Marsh deposit consists of interbedded peat and silty to clayey sand. It can be present merely as a zone of organic material or greenish-gray clayey zone, or range up to 10 feet thick. It appears to thicken to the northeast (*e.g.*, as in the boring for the E-4 wells).
- Underlying the Marsh deposit is the Battery Formation, a littoral sand deposit. The Battery Formation ranges in thickness from about five to 30 feet, although, in general, it is thinner overall than the Dune deposits. Hydraulic conductivity of the Battery Formation ranges from 4.1×10^{-4} to 6.1×10^{-5} cm/sec.
- Underlying the Battery Formation is bedrock of the St. George Formation. The St. George Formation consists of highly consolidated siltstone and sandstone, and is considered essentially non-water bearing.

The Dune, Marsh, and Battery deposits range in age from Pleistocene to Holocene (approximately 2.5 million years to present). The St. George Formation is late Miocene in age (approximately 5 to 6 million years).

SURFACE-WATER OCCURRENCE

Because of the relatively high permeability of the Dune deposits, precipitation and surface drainage can rapidly percolate downward into the deposits. Similarly, there can be a relatively strong connection between groundwater and surface water, especially where groundwater levels are near ground surface. Historically, groundwater mounds were noted below surface impoundments.

GROUNDWATER OCCURRENCE

Groundwater occurs principally in the Dune and Battery deposits; for practical purposes, the St. George Formation is non-water bearing. Although the Marsh deposit is saturated in some locations, it is not considered an aquifer; rather, it acts as an aquitard between the Dune and Battery deposits.

Depth to groundwater at the Landfill site generally ranges from near ground surface (less than five feet) to approximately 40 feet below ground surface (bgs).

At all locations, the elevation of the piezometric surface is higher in the Dune deposit relative to that of the Battery Formation. The difference ranges from about one foot (in the W-6E/W pair) to almost eight feet (in the W-1E/W pair). Thus, the relative elevations of the piezometric surfaces show that there is a net downward gradient from the Dune deposit to the Battery Formation. This is the case even though the Battery Formation aquifer is semiconfined by the Marsh deposit.

Figures 2 and 3 shows groundwater elevation contour maps based on combined water-level measurements made on January 22, February 12, and March 5, for the Dune (shallow) and Battery (deep) aquifers, respectively. **Table 1** (following text) summarizes the current groundwater-level data. The direction of the groundwater gradient is similar in both aquifers, generally ranging from east to southeast at magnitudes ranging from 0.006 to 0.022 feet/foot. The exception to the overall gradient direction and magnitude is at the northeastern corner of the landfill in the deep aquifer. In this area, the gradient steepens to approximately 0.071 feet/foot towards the northeast.

Although the various wells' screened intervals are not exactly the same, the differences in screened-interval length or elevation is not sufficient to cause such distinct changes in gradient. Possible explanations for the gradient changes are stratigraphic changes and changes in elevation of the top of the St. George Formation.

To the northeast of the Landfill, the Battery Formation (deep aquifer) essentially thins to nothing, with the lower permeability Marsh deposit lying directly on the St. George Formation. Additionally, the top of bedrock is higher in elevation to the northeast, leading to a thinning of the aquifer. With a thinner aquifer and decreasing hydraulic conductivity, an increase in the groundwater gradient is to be expected.

WATER QUALITY

Table 2 (following text) contains a summary of the second-half results. **Table 3** (following text) contains a summary of historical and current VOC detections. **Attachment A** contains laboratory sheets and field data; **Attachment B** contains time-series graphs of general mineral parameters. Tables for historical data are presented in **Attachment C** (as a separate file).

As early as 1987, groundwater quality impacts from site operations were noted. The impacts were attributed to different site operations, including the now-closed sludge and whey ponds, and the landfill itself. Closure of the various ponds and capping the landfill, however, has improved groundwater quality in almost all locations.

SOUTHEAST TO SOUTHWEST OF LANDFILL MOUND

Figure 4 shows TDS time-series graphs for the E-1 pair, E-2 Deep, SM-6, W-2 Deep, W-3S, and W-8 Shallow, located on the generally southeast to southwest sides (downgradient and crossgradient) of the Landfill.

In the E-1 pair, TDS increased in the period 1996 through 2009, but has decreased since 2009. The overall increase between 1996 and 2015 is statistically significant at the 95% level (statistical sheets are in Attachment A in the MRP Update Report). Since closure (2006 to present), TDS in both E-1 wells is decreasing, although the decrease is not statistically significant and E-1 Deep has shown a higher TDS periodically in the last three years. TDS value in the shallow aquifer at E-1 was at 269 mg/L in first-half 2018.

Southeast and immediately adjacent to the landfill, shallow well SM-6 shows a statistically significant decreasing trend for TDS for 1995 through 2015; TDS continued to decline in 2016, but has been slightly higher for the last two monitoring events. TDS in SM-6 was at 353 mg/L in first-half 2018. Well E-2 Deep shows no significant trend for its period-of-record (2007 to present). TDS in E-2 Deep was at 571 mg/L in first-half 2018.

Well SM-6 had detections of relatively high concentrations of toluene between September 2012 and September 2013 (see below); toluene was nondetected in November 2014 and March 2015, but detected again in August 2015 and January 2016. Toluene has been nondetected since January 2016.

Date	SM-6, Toluene (µg/L)	Date	SM-6, Toluene (µg/L)
6-Sep-12	610	25-Feb-14	1.3
24-Jan-13	1.6	24-Nov-14	<0.5
20-Aug-13	2600	19-Mar-15	<0.5
17-Sep-13	270	18-Aug-15	91
		27-Jan-16	0.90

The patterns of detections (sudden onsets, sudden decreases) is more characteristic of vandalism or the presence of VOC-containing materials in the well, not Landfill influence. As described above, SM-6 was redeveloped and properly secured in 2016.

At the immediate southwestern corner of the Landfill, well W-2 Deep is the only site well that currently shows an increasing trend since closure. This location is very close to the landfill, and the groundwater level here likely is very close to the bottom of waste. The TDS in W-2 Deep shows a significant increasing trend since at least 1990, with no apparent changes since closure. In 2016 and first-half 2017, TDS in W-2 deep approached 900 mg/L. TDS has declined to approximately 700 mg/L since then.

VOC have only been detected in W-2 Deep once, in August 2009 (hexachloroethane at 110 µg/L). This detection may reflect non-landfill influence because hexachloroethane also was detected at exactly 110 µg/L in five of the site wells on the same date; it seems unlikely that contamination derived from the landfill would show the same concentration in five wells on the same date.

As described above (page 3), it appears that surface water had been entering the casing of W-2 Deep. Surface-water inflow should cease because the casing was extended and a water-tight cap was installed during second-half 2016. Data from 2016 to date suggest that this work may have been effective in slowing or stopping the increasing trends, as the concentrations of several parameters (alkalinity, bicarbonate, calcium, conductivity, hardness, magnesium, and TDS) have stabilized or decreased (see graphs in **Attachment B**).

The two shallow wells in the area southwest of the Landfill mound, W-3 Shallow and W-8 Shallow, are upgradient and crossgradient of the Landfill mound, respectively, although W-3 Shallow is downgradient of former waste ponds. For the period 1988 through 2015, W-3 Shallow showed a significant decreasing trend and W-8 Shallow showed no significant trend.

This is consistent with W-3 Shallow being downgradient of the former ponds. After their closure, it would be expected that downgradient groundwater quality would improve. W-8 Shallow is crossgradient of former and current Landfill features, so it would be expected that groundwater quality would remain stable at that location. The most recent TDS concentrations in these wells are approximately 180 mg/L. VOC have been nondetected in W-3 Shallow for the last six years; VOC have always been nondetected in W-8 Shallow.

NORTHEAST TO NORTH OF LANDFILL MOUND (TOWARDS RESIDENTIAL AREA)

Figure 5 shows the time-series graphs for wells northeast to north of the Landfill mound, directly between the Landfill and the closest neighboring wells which are to the northeast of the Landfill property. Monitoring wells between the Landfill and the neighbors are the E-3 and E-4 pairs. The E-3 pair has been monitored since 1996; the E-4 pair was installed in early 2014, and has a limited number of data points.

Looking at TDS from the period-of-record shows that values were higher in both E-3 Shallow and Deep before closure. Before closure, TDS ranged near or above 1,200 mg/L periodically in these wells. Since closure, TDS has decreased and generally is near or below 300 to 400 mg/L currently. The decreasing trends in these wells since closure is statistically significant.

Both wells have had periodic detections of VOC, although all VOC have been nondetected in E-3 Shallow for the last eight years. In E-3 Deep, there were occasional detections of chloroethene, at 1 to 2 µg/L, between 2002 and 2013. Methyl tert-butyl ether (MTBE) was detected in E-3 Deep in 2002 (6.4 µg/L), 2009 (0.52 µg/L), and 2014 (0.74 µg/L). Tert-butyl alcohol (TBA) was detected in E-3 Deep in August 2014 at 13 µg/L. No VOC were detected in either E-3 Shallow or Deep in 2017. Constituents-of-concern (COC) are analyzed every five years; to date, COC have been analyzed twice since the landfill closure construction was completed, in 2009 and 2014 (COC are due to be analyzed again in 2019). **Table 3** (following text) summarizes historical organic compound detections.

In the E-4 Shallow and Deep pair, TDS has declined over the period 2014 through 2017. MTBE and TBA were nondetected in the shallow aquifer. In the deep aquifer, MTBE was detected at 0.6 µg/L and TBA at 6.9 µg/L in August 2014. No VOC were detected in E-4 Shallow in first-half 2018.

At the immediate northern edge of the Landfill mound and crossgradient of the waste, the 6-E Shallow and 6-W Deep pair show no significant trends in TDS for the period-of-record. Since closure, however, both show significant decreasing trends. Over the last five years, TDS has hovered around 200 mg/L for both wells. VOC have always been nondetected in 6-E Shallow; VOC have not been detected since 2001 in 6-W Deep.

In the shallow aquifer farther north and crossgradient of the Landfill mound, well W-10 Shallow shows no significant trends for TDS, although there are distinct seasonal variations in TDS concentrations. TDS generally ranges between 100 and 300 mg/L, seasonally. VOC have always been nondetected.

UPGRADIENT OF LANDFILL MOUND

Figure 6 shows the time-series graphs for wells upgradient of the Landfill mound. The well pair W-1E Deep and W-1W Shallow historically showed relatively high TDS concentrations (500 to 800 mg/L) which were related to the previous waste ponds. After closure of the waste ponds, TDS in this well pair decreased almost immediately, and has remained relatively constant since that time. The most recent TDS values generally are less than 150 mg/L for the deep aquifer and less than 200 mg/L for the shallow aquifer. VOC have always been nondetected in this well pair.

Well SM-7, in the shallow aquifer to the north of the W-1E/W-1W pair, shows a similar pattern. Historic TDS values were as high as 1,200 mg/L because SM-7 was near former waste ponds. After closure, TDS decreased immediately, and since 2006 has been stable, ranging from 100 to 150 mg/L. There was one VOC detection in 2009 (hexachloroethane at 110 µg/L); as discussed above, it is likely that the hexachloroethane detection in 2009 represented outside contamination of some sort, not aquifer conditions. During first-half 2017, toluene at 1.7 µg/L was detected in SM-7. The significance of this detection is unknown. VOC were not detected in second-half 2017 or first-half 2018.

Upgradient of the Landfill mound and generally outside of the influence of other Landfill features, the W-9 Shallow/Deep well pair has shown consistent water quality since 1997. For that period, TDS in the shallow aquifer here has been consistently just over 240 mg/L. In the deep aquifer, TDS has shown more variability than in the shallow aquifer, ranging between 100 and 250 mg/L. VOC always have been nondetected in this well pair.

COMPARISON TO GROUNDWATER LIMITS

Table 2 (following text) shows the previously established groundwater limits for the shallow aquifer; limits were not established for the deep aquifer.³ Of the analyzed parameters, which also have limits, only SM-6 Shallow (downgradient of the landfill) showed an exceedance, for manganese (0.88 mg/L exceeding the limit of 0.6 mg/L).

LANDFILL GAS

Figures 2 and 3 show landfill-gas probe locations. Monitoring data were not provided to L&A for preparation of this report.

³ March 27, 1996, rev. October 14, 1996, Winzler & Kelly, *Technical Memorandum – Deliverable for Tasks 2, 3, and 4 of Article 5 Compliance Documents*.

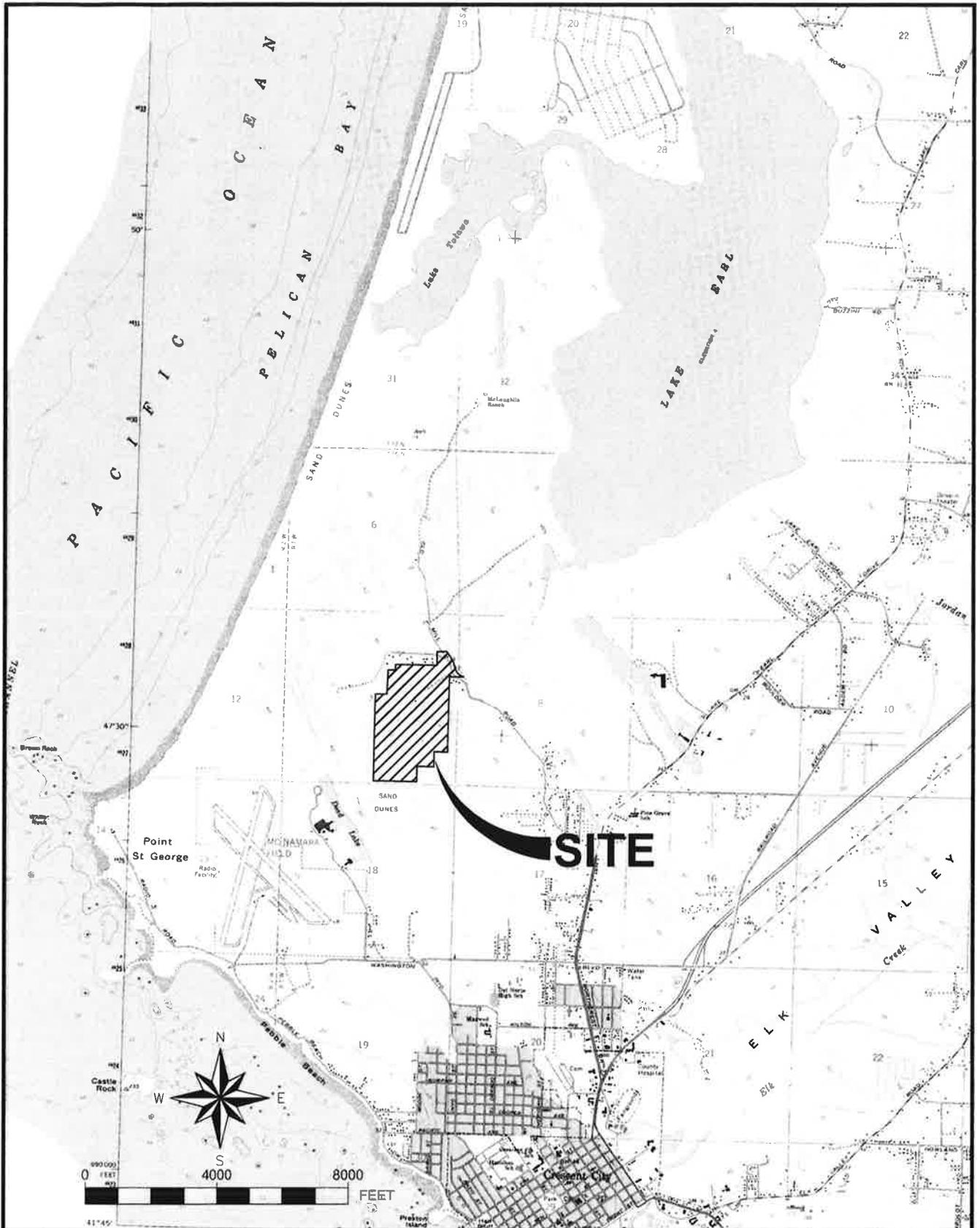
TABLE 1
Summary of Current Water-Level Data - Crescent City Landfill

DEPTH TO GROUNDWATER & GROUNDWATER ELEVATIONS				
WELL	TOC ELEV	DTW	GW ELEV	DATE
	feet MSL	feet TOC	feet MSL	
E -1 Deep	50.63	28.03	22.60	1/22/2018
E -1 Shallow	52.76	28.67	24.09	1/22/2018
E - 3 Deep	56.54	33.16	23.38	1/22/2018
E - 3 Shallow	57.65	31.26	26.39	1/22/2018
W-6W Deep	47.03	13.10	33.93	1/22/2018
W-6E Shallow	47.06	11.00	36.06	1/22/2018
E-2 Deep	26.86	4.70	22.16	2/12/2018
SM-6 Shallow	28.57	6.09	22.48	2/12/2018
W-8 Shallow	53.58	24.28	29.30	2/12/2018
W-9 Deep	61.07	22.40	38.67	2/12/2018
W-9 Shallow	53.13	8.00	45.13	2/12/2018
W-1E Deep	52.71	16.84	35.87	3/5/2018
W-1W Shallow	52.50	8.53	43.97	3/5/2018
W-2 Deep	32.77	3.63	29.14	3/5/2018
W-3S Shallow	43.76	4.75	39.01	3/5/2018
W-10 Shallow	45.42	7.30	38.12	3/5/2018
SM-7 Shallow	50.38	6.60	43.78	3/5/2018
E-4 Shallow	58.34	30.21	28.13	3/12/2018
E-4 Deep	57.94	37.55	20.39	3/12/2018

TABLE 2
Summary of Current Monitoring Data - Crescent City Landfill

Point	Date	TDS (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Alkalinity (mg/l)	Conductivity (umhos/cm)	pH (units)	Nitrate (mg/l)	Fluoride (mg/l)	Bicarbonate (mg/l)	Carbonate (mg/l)	COD (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Manganese (mg/l)	Potassium (mg/l)	Sodium (mg/l)	Hardness (mg/l)	Zinc (mg/l)	Arsenic (mg/L)	Nickel (mg/L)	Barium (mg/L)	Cobalt (mg/L)	Iron (mg/L)	
E-1_DEEP	01/22/18	530	51	<0.50	320	820	7.23	<0.10	<0.10	325	<1.0	14	42	52	1.5	4	22	320	0.0280	0.0120	0.0130	0.0150	<0.005	14.0000	
E-1_SH	01/23/18	269	14	<0.50	140	375	7.60	<0.10	<0.10	140	<1.0	<5.0	12	14	0.22	8.5	11	88	<0.01	0.0083	0.0253	0.0140	<0.005	7.4000	
E-2_DEEP	02/12/18	571	43	<0.50	400	803	8.90	<0.10	<0.10	370	28	<5.0	75	66	0.44	4.2	19	460	<0.01	0.0300	<0.005	0.0120	<0.005	0.0180	
E-3_DEEP	01/23/18	357	18	<0.50	200	497	8.20	<0.10	<0.10	200	<1.0	16	39	24	0.92	6.5	6.6	200	<0.01	<0.005	<0.005	0.0100	<0.005	4.6000	
E-3_SH	01/22/18	492	31	2.6	310	693	8.30	4.3	<0.10	310	<1.0	<5	84	36	0.17	5.6	12	360	<0.01	<0.005	0.0110	0.0084	<0.005	0.0160	
E-4_DEEP																									
E-4_SH	03/12/18	371	17	3.5	240	521	7.20	1	<0.10	240	<1.0	<5.0	61	28	0.28	3.8	9.6	270	0.0380	<0.005	0.0052	0.0540	<0.005	<0.015	
W-1W_SH (BKGR)	03/05/18	130	6.8	2.5	80	180.3	7.60	0.36	<0.10	90	<1.0	14	10	7.9	0.0013	0.48	6.6	59	<0.01	<0.005	0.0662	<0.005	<0.005	0.0410	
W-1E_DEEP (BKGR)	03/05/18	271	27	<0.50	120	384	7.60	<0.10	<0.10	120	<1.0	1E	33	12	0.12	1.3	11	130	0.0130	<0.005	<0.005	0.0091	<0.005	2.2000	
W-2_DEEP	03/05/18	754	140	<0.50	400	1067	7.20	<0.10	<0.10	400	<1.0	33	93	92	7	0.96	16	610	0.0300	0.0330	0.0210	0.0120	0.0069	9.2000	
W-3S_SH	01/05/18	178	18	3.1	81	252	7.77	<0.10	<0.10	81	<1.0	54	14	17	0.26	0.71	7.5	100	<0.01	<0.005	0.0090	<0.005	<0.005	1.3000	
W-6E_SH	01/23/18	230	16	0.66	130	333	8.10	<0.10	<0.10	130	<1.0	<5.0	20	19	0.12	0.92	11	130	<0.01	<0.005	<0.005	<0.005	<0.005	0.5300	
W-6W_DEEP	03/22/18	223	18	<0.50	120	320	7.80	<0.10	<0.10	120	<1.0	8	13	24	0.28	0.99	11	130	<0.01	<0.005	<0.005	<0.005	<0.005	3.7000	
W-8_SH	02/22/18	164	12	1.2	91	235	7.90	<0.10	<0.10	90	<1.0	<5	16	15	0.03	0.82	6.2	100	<0.01	<0.005	0.0099	<0.005	<0.005	0.3800	
W-9_SH (BKGR)	02/22/18	100	7.4	2.1	49	141.3	8.70	<0.10	<0.10	47	<1.0	15	3.2	10	0.026	0.97	5.8	51	0.0110	0.0054	0.0260	<0.005	<0.005	1.5000	
W-9_DEEP (BKGR)	03/12/18	300	21	<0.50	160	425	7.40	<0.10	<0.10	160	<1.0	15	47	12	0.2	1.1	12	180	<0.01	0.0054	0.0064	<0.005	<0.005	0.8000	
W-10_SH	03/05/18	161	5.4	3	76	228	7.60	<0.10	<0.10	76	<1.0	36	14	7.9	0.01	0.7	6.5	68	<0.01	<0.005	<0.005	<0.005	<0.005	0.1700	
SM-6_SH	07/12/18	353	21	<0.5	220	510	7.97	<0.10	<0.10	220	1.9	25	47	25	0.88	5.6	14	220	1.2000	<0.005	0.0280	0.0620	0.0069	1.8000	
SM-7_SH (BKGR)	03/05/18	167	23	2.1	71	237	8.10	<0.10	<0.10	70	<1.0	39	6.3	22	0.32	0.8	6.2	100	<0.01	<0.005	0.0240	<0.005	<0.005	0.0450	
Tolerance Interval for Shallow Aquifer:		760	134	18	NE	960	6.7 - 9.3	NE	NE	272	NE	241	93	42	0.6	NE	42	NE	NE	NE	NE	NE	NE	NE	NE

Notes: NS = Not sampled. NE = Not Established. Only VOC and metals that were detected are listed.
Lawrence & Associates, 015063.00



SITE LOCATION MAP
 ADAPTED FROM USGS 15-MINUTE
 TOPOGRAPHIC QUADRANGLE: CRESCENT CITY

PROJECT NAME: CRESCENT CITY LF	PROJECT NO: 015063.00	DATE: 11/22/2018
CLIENT: DNSWMA	DRAWN BY: J. BEERS	FIGURE 1
SCALE: 1" = 4000'	CHECKED BY: B. LAMPLEY	



LEGEND

- ◆ E-1 SH GROUNDWATER MONITORING WELL
24.09 SHOWING GROUNDWATER ELEVATION, FEET MSL
- G1 APPROXIMATE GAS WELL LOCATION
- ⊕ L-1 APPROXIMATE LEACHATE WELL LOCATION
- 36 — GROUNDWATER ELEVATION CONTOUR, FEET MSL
- 1=0.006 — GROUNDWATER GRADIENT FT/FT



**SHALLOW AQUIFER
GROUNDWATER ELEVATION
JANUARY 22, FEBRUARY 12, & MARCH 5, 2018**

DEL NORTE SOLID WASTE MGMT. AUTHORITY

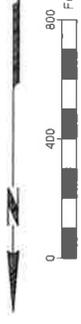
CRESCENT CITY LANDFILL

PROJECT NO. 015063.00
SCALE 1" = 400'

DRAWN BY: J. BEERS
DATE: 10/8/2018

CHECKED BY: B. LAMBLEY
FIGURE 2

F:\015063.00_saf north landfill\fig-2-jan-feb-march18a.dwg J.R.B. 10/8/2018



- LEGEND**
- ◆ E-2
22.16 GROUNDWATER MONITORING WELL
SHOWING GROUNDWATER ELEVATION, FEET MSL.
 - G1 APPROXIMATE GAS WELL LOCATION
 - ⊕ L-1 APPROXIMATE LEACHATE WELL LOCATION
 - 3.0 — GROUNDWATER ELEVATION CONTOUR, FEET MSL
 - 0.006 — GROUNDWATER GRADIENT FT/FT



**DEEP AQUIFER
GROUNDWATER ELEVATION
JANUARY 22, FEBRUARY 12, & MARCH 5, 2018**

**DEL NORTE SOLID WASTE MGMT. AUTHORITY
CRESCENT CITY LANDFILL**

PROJECT NO. 015063.00
SCALE 1" = 400'
DRAWN BY J. BEERS
DATE 10/8/2018
CHECKED BY B. LAMPLEY
FIGURE 3

\\V01063.00_015063.dwg 10/8/2018 2:48:10 PM

TDS Time-Series Graphs, East to Southeast of Landfill

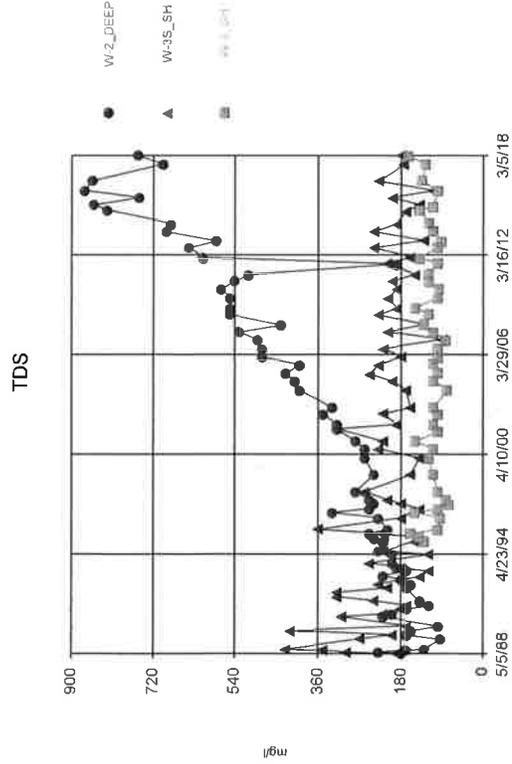
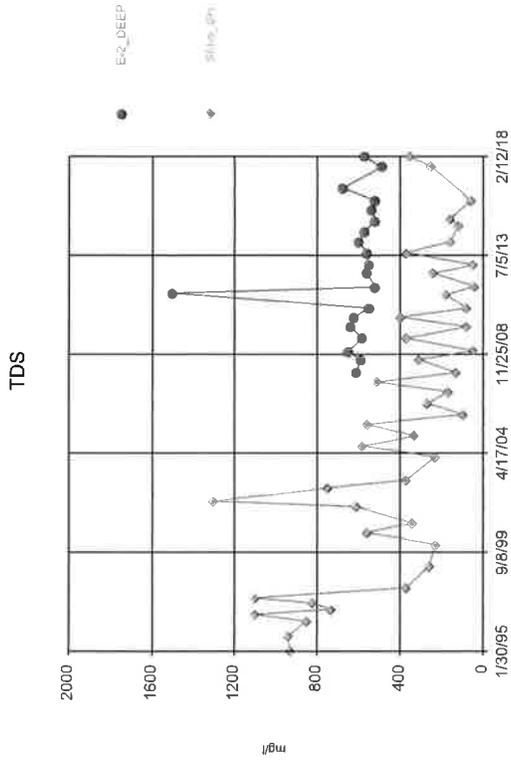
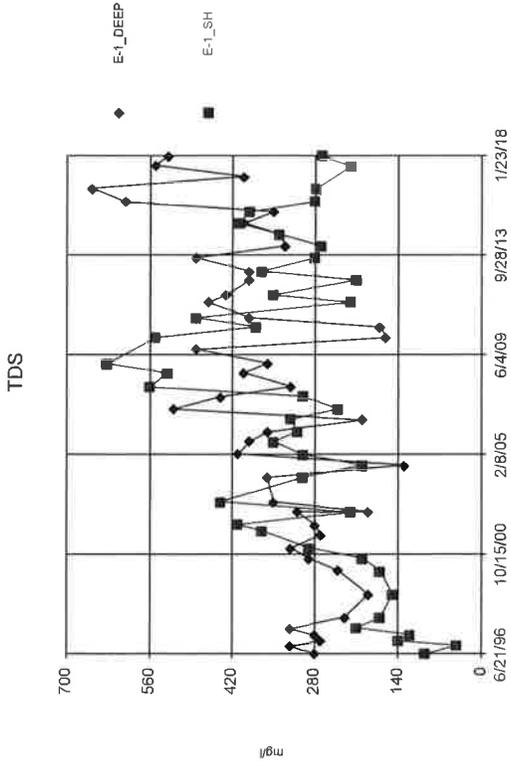
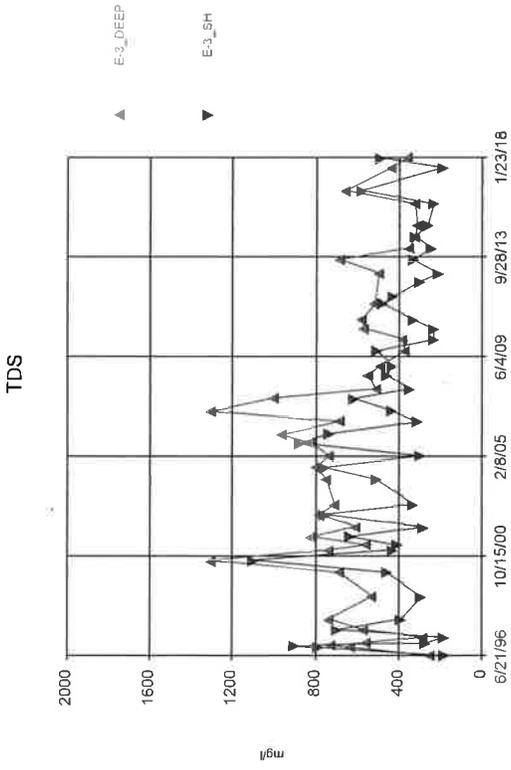
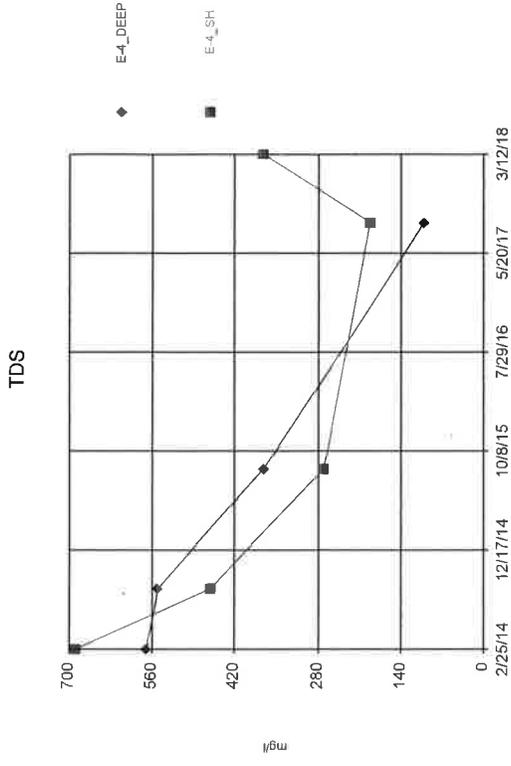


FIGURE 4

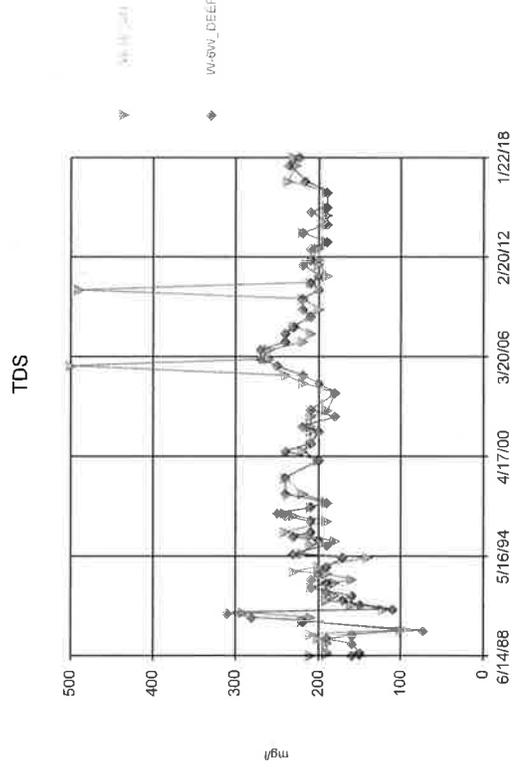
TDS Time-Series Graphs, Northeast to North of Landfill



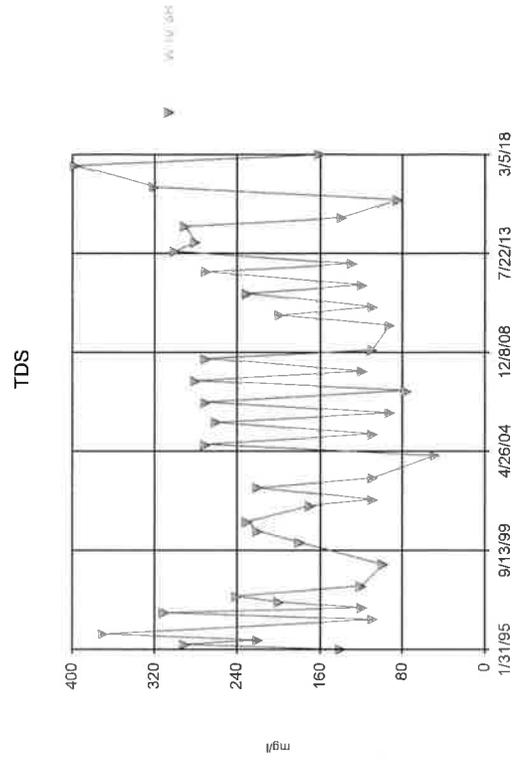
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 Facility: Crescent City Landfill Data File: CCLF_Stats



Time Series Analysis Run 11/19/2018 5:13 PM
 Facility: Crescent City Landfill Data File: CCLF_Stats



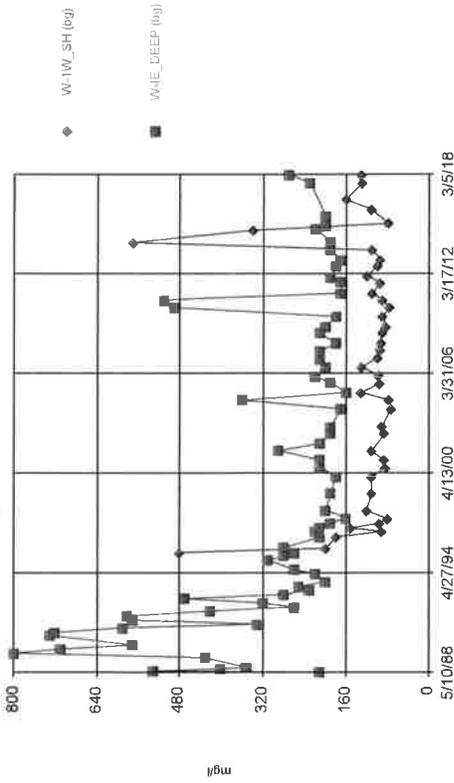
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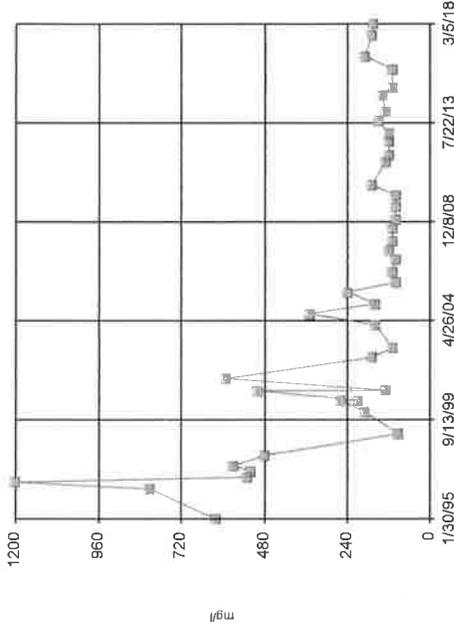
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TDS Time-Series Graphs, Upgradient of Landfill

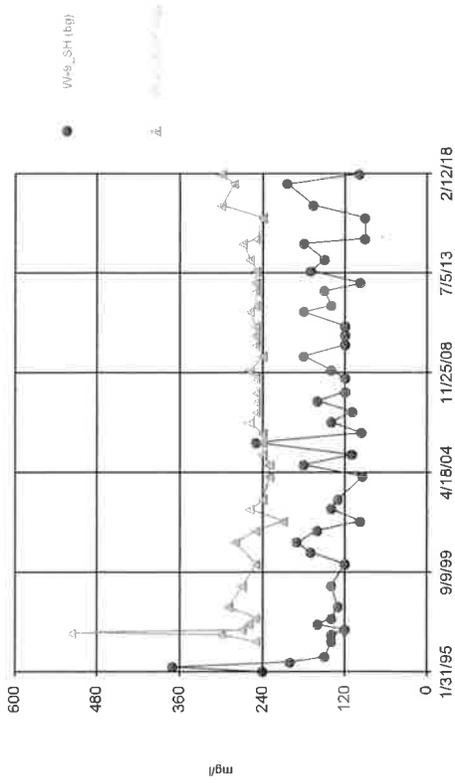
TDS



TDS



TDS



TDS



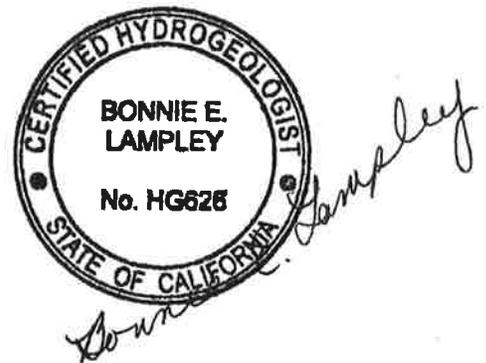
FIGURE 6



015063.00
Task 9

**SECOND-HALF AND ANNUAL 2018
WATER-QUALITY MONITORING REPORT
FOR
CRESCENT CITY LANDFILL**

FEBRUARY 21, 2019



PREPARED FOR:

**DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY
1700 STATE STREET
CRESCENT CITY, CA 95531**

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- A. Field data & laboratory sheets
- B. Time-series graphs – general parameters
- C. Historical data tables

INTRODUCTION

This document presents the second-half and annual 2018 water-quality monitoring report for the Crescent City Landfill (Landfill), Del Norte County, California (**Figures 1 and 2**). Lawrence & Associates (L&A) prepared this report at the request of the Del Norte Solid Waste Management Authority (DNSWMA), a joint powers authority of the County of Del Norte and the only incorporated city, Crescent City. The Authority has administrative responsibility for the Crescent City Landfill, including environmental monitoring, reporting, and compliance, though the landfill and landfill property are owned by the County of Del Norte.

The Landfill, which was closed in March 2005, is monitored under Waste Discharge Requirements (WDR) Order No. 97-90, issued by the North Coast Regional Water Quality Control Board (NCRWQCB) on September 25, 1997.

In anticipation of updating the WDR, the DNSWMA proposed updates to the Monitoring & Reporting Program (MRP). To that end, L&A prepared a report (MRP Update Report) summarizing the landfill history and operations, describing the hydrogeology of the site in detail, and interpreting the historical water-quality data, and proposing changes to the MRP.¹

On September 16, 2016, the NCRWQCB issued a letter reducing the Threat/Complexity (T/C) Rating for the Landfill from 1A to 2A. The letter stated the following:

“Specifically, to maintain a 2A rating, you must continue to monitor the two nearest domestic wells, identified as 110-140-24 and 110-149-16, twice a year at the same time as the SWDS sampling. Analytes shall include, at a minimum, the general chemistry and field parameters required at the SWDS monitoring wells and volatile organic compounds U.S. EPA Method 8260, including oxygenates. Data from these wells shall be included in the regular monitoring reports. Other monitoring points may be proposed to replace sampling at the domestic wells, but are subject to review and approval by the Executive Officer of the Regional Water Board.”

DNSWMA staff has contacted the owners of the above-described wells to obtain permission to sample, but the owners have continued to decline to give permission.

Based on the analysis herein and the MRP Update Report, it is neither clear whether an additional downgradient well is necessary at this time nor where one should be located. The location of new downgradient wells may depend, in part, on the results of the residential well sampling, and on the continued monitoring of the E-4 well pair. In the MRP Update Report, we recommended evaluating the need and/or location for a new downgradient well in six months, after one more sampling event for the E-4 pair and sampling of the residential wells. The E-4 well pair was not

¹ L&A, January 13, 2016, *Proposed Updates to Monitoring & Reporting Program for Crescent City Landfill*.

sampled in either of the 2016 events, but was sampled in the first-half 2017 event. The need for a new downgradient well is discussed herein, based on the results from the first- and second-half 2017 sampling. We also recommend sampling the above-described residential wells, although we understand from DNSWMA staff that the residents have indicated they do not wish to participate in any further monitoring of their wells.

SUMMARY

GROUNDWATER GRADIENT AND MOVEMENT

Figures 2 and 3 shows groundwater elevation contour maps for October 3 and 4, 2018, for the Dune (shallow) and Battery (deep) aquifers, respectively; Table 1 (following text) summarizes the current depth to water and groundwater elevations. The direction of the groundwater gradient was similar in both aquifers, generally ranging from east to southeast at magnitudes ranging from 0.006 to 0.029 feet/foot. The exception to the overall gradient direction and magnitude is at the northeastern corner of the landfill in the deep aquifer. In this area, the gradient steepens towards the northeast. All gradients are similar to previous periods.

GENERAL WATER QUALITY

Second-half 2018 water-quality monitoring was performed by DNSWMA per WDR Order No. 97-90. Results were similar to those from recent monitoring events. Table 2 summarizes the current general parameter and metals results.

Table 3 summarizes the historical volatile organic compounds (VOC) detections. VOC were not detected in any of the monitored wells in either first- or second-half 2018. The last VOC detections were in first-half 2017 (two detections – 0.5 µg/L of methyl tert-butyl ether (MTBE) in E-1 Shallow and 1.7 µg/L of toluene in SM-7 Shallow).

VOC were not detected in E-4 Shallow (the shallow aquifer well closest to the nearest residences), and it has always been nondetected for VOC. Well E-4 Deep had previous detections, in 2014, of 0.56 µg/L of MTBE and 6.9 µg/L of TBA. In E-4 Shallow, general parameters (such as TDS, alkalinity, hardness, calcium, sodium, etc.) have shown a distinct decline in concentration over the last four years.

Therefore, based on the recent historical and current results, a new well further downgradient of the E-4 pair does not appear to be warranted at this time. It is imperative, however, that the E-4 pair be sampled during every monitoring event, even though they are not officially listed in the WDR. The need for additional wells downgradient of the E-4 pair and upgradient of the nearest residences should continue to be evaluated after every sampling event, for the foreseeable future.

Wells downgradient of the Landfill and between the Landfill and the residential area show decreasing trends for TDS since Landfill closure. The E-3 pair, W-6E, W-6W, and SM-6 all show statistically significant decreasing trends in TDS since closure (*ibid.*). The E-1 pair shows decreasing trends in TDS, although not statistically significant. Most of these wells have not

shown VOC detections for at least the last six years. VOC have never been detected in W-6E; VOC have not been detected in W-6W since 2001.

The only increasing trend in TDS is in crossgradient well W-2, through early 2016. It is unusual, in that there is not a correlative increase in TDS in any of the downgradient wells. If the increase in TDS in W-2 was attributable to significant leachate migrating to groundwater over such a long period (almost 30 years), it would be expected that the downgradient wells would be showing increasing trends. All downgradient wells, however, are showing decreasing trends. Landfill-gas migration also does not appear to be causing this increase, as no other wells show a similar trend. A video survey of W-2, conducted in 2016, did not show damaged casing, but did show that surface-water intrusion had been occurring. L&A staff redeveloped and properly capped W-2 in 2016. Data since then suggests that this work may have been effective in slowing or stopping the increasing trends, as the concentrations of several parameters (alkalinity, bicarbonate, calcium, conductivity, hardness, magnesium, and TDS) have declined or stabilized (see graphs in **Attachment B**).

SITE DESCRIPTION

The Landfill is located two miles north of Crescent City, in Del Norte County, on a 166-acre property (**Figure 1**). The property encompasses parcels APN 110-020-08, APN 1120-020-43, and a portion of APN 110-020-69. The property is owned by Del Norte County and zoned as a Public Facility. Current land uses within one mile of the site are recreational, wildlife habitat, agricultural, residential, and industrial. The Landfill mound comprises approximately 23 acres of the 167-acre site.

The landfill property is surrounded on three sides by land owned by the California Department of Parks and Recreation; their holdings include approximately 5,000 acres extending from Old Mill Road to the ocean, less than two miles to the west. There is a residential area consisting of sixteen properties located approximately one quarter to one half mile north-northeast of the Landfill mound (main body of waste; **Figures 2 and 3**).

In 1996, the approximate southern half of the landfill was capped with a 60-mil coextruded geomembrane. In October 2005, the second phase of closure included capping the remaining area with a linear low-density polyethylene (LLDPE) geomembrane. Since 2005, no waste has been disposed at the Landfill.

Since 1997, groundwater-monitoring has been conducted using 17 groundwater monitoring wells, one leachate well, and three surface-water points. Two additional wells, E-4 Shallow and E-4 Deep, have been sampled but are not under MRP 97-90, as they were installed in 2014. Monitoring is conducted by DNSWMA and County staff.

Beginning in at least 1987, evidence of Landfill influence on groundwater and surface-water quality was noted. Impacts consist of periodic detections of organic compounds and elevated

mineral constituents. In general, however, water quality has improved since the completion of landfill capping. This was discussed in detail in the MRP Update Report.

METHODS

SAMPLING

DNSWMA staff conducted the groundwater and surface-water sampling per the protocol recommended in a Technical Memorandum prepared in 1996 by Winzler & Kelly, and approved by NCRWQCB staff. Before sampling, the depth to water in each groundwater well was measured to the nearest 0.01 foot with an electronic well sounder.

Field parameters were measured per the Sampling and Analysis Plan; the meter was calibrated the morning of the actual testing. Field parameter data was not available, however, for reporting herein.

Samples were shipped on ice and accompanied by appropriate chain-of-custody documentation, to North Coast Laboratories, Ltd., in Arcata, California.

Well E-4 Deep was unable to be sampled because of equipment malfunction. DNSWMA staff are obtaining new equipment and tubing for this well.

HYDROGEOLOGICAL SETTING

The following discussions of the hydrogeologic setting and water quality were taken from the more detailed description in the MRP Update Report. Please refer to that report for additional information, as indicated.

STRATIGRAPHY

The Landfill site is underlain by the following geologic units, from ground surface downwards:

- Dune deposits of well-sorted, poorly consolidated, fine-grained sand. The Dune deposit is of varying thickness, depending on the ground-surface topography. In the higher elevation portions of the site, the Dune deposits can be as much as 40 feet thick (*e.g.*, as in the boring for the E-4 wells). In other areas, the Dune deposits may be less than 10 feet thick (*e.g.*, as in the boring for well W-2). Hydraulic conductivity of the Dune deposits ranges from 1.1×10^{-3} to 5.8×10^{-3} cm/sec.
- Underlying the Dune deposits is a unit characterized as the Marsh deposit. The Marsh deposit consists of interbedded peat and silty to clayey sand. It can be present merely as a zone of organic material or greenish-gray clayey zone, or range up to 10 feet thick. It appears to thicken to the northeast (*e.g.*, as in the boring for the E-4 wells).

- Underlying the Marsh deposit is the Battery Formation, a littoral sand deposit. The Battery Formation ranges in thickness from about five to 30 feet, although, in general, it is thinner overall than the Dune deposits. Hydraulic conductivity of the Battery Formation ranges from 4.1×10^{-4} to 6.1×10^{-5} cm/sec.
- Underlying the Battery Formation is bedrock of the St. George Formation. The St. George Formation consists of highly consolidated siltstone and sandstone, and is considered essentially non-water bearing.

The Dune, Marsh, and Battery deposits range in age from Pleistocene to Holocene (approximately 2.5 million years to present). The St. George Formation is late Miocene in age (approximately 5 to 6 million years).

SURFACE-WATER OCCURRENCE

Because of the relatively high permeability of the Dune deposits, precipitation and surface drainage can rapidly percolate downward into the deposits. Similarly, there can be a relatively strong connection between groundwater and surface water, especially where groundwater levels are near ground surface. Historically, groundwater mounds were noted below surface impoundments.

GROUNDWATER OCCURRENCE

Groundwater occurs principally in the Dune and Battery deposits; for practical purposes, the St. George Formation is non-water bearing. Although the Marsh deposit is saturated in some locations, it is not considered an aquifer; rather, it acts as an aquitard between the Dune and Battery deposits.

Depth to groundwater at the Landfill site generally ranges from near ground surface (less than five feet) to approximately 40 feet below ground surface (bgs).

At all locations, the elevation of the piezometric surface is higher in the Dune deposit relative to that of the Battery Formation. The difference ranges from about one foot (in the W-6E/W pair) to almost eight feet (in the W-1E/W pair). Thus, the relative elevations of the piezometric surfaces show that there is a net downward gradient from the Dune deposit to the Battery Formation. This is the case even though the Battery Formation aquifer is semiconfined by the Marsh deposit.

Figures 2 and 3 shows groundwater elevation contour maps for October 3 and 4, 2018, for the Dune (shallow) and Battery (deep) aquifers, respectively. The direction of the groundwater gradient is similar in both aquifers, generally ranging from east to southeast at magnitudes ranging from 0.006 to 0.029 feet/foot. The exception to the overall gradient direction and magnitude is at the northeastern corner of the landfill in the deep aquifer. In this area, the gradient steepens towards the northeast. All gradients are similar to previous periods.

Both aquifers show a steepening of the gradient generally in the middle part of the site, beneath the central part of the Landfill mound. This is especially apparent in the Battery aquifer; in this area in the Battery aquifer, the gradient steepens from approximately 0.008 feet/foot to 0.029 feet/foot, with the direction remaining generally unchanged.

The groundwater gradient in the Battery Formation aquifer shows another distinct steepening and change of direction in the area bounded by the W-6W Deep, E-4 Deep, and E-3 Deep (between the Landfill mound and the nearest residential wells). In this area, the gradient steepens more, and has a slight change of direction, becoming more easterly.

Although the various wells' screened intervals are not exactly the same, the differences in screened-interval length or elevation is not sufficient to cause such distinct changes in gradient. Possible explanations for the gradient changes are stratigraphic changes and changes in elevation of the top of the St. George Formation.

To the northeast of the Landfill, the Battery Formation (deep aquifer) essentially thins to nothing, with the lower permeability Marsh deposit lying directly on the St. George Formation. Additionally, the top of bedrock is higher in elevation to the northeast, leading to a thinning of the aquifer. With a thinner aquifer and decreasing hydraulic conductivity, an increase in the groundwater gradient is to be expected.

WATER QUALITY

Table 1 (following text) summarizes the current water-level data. **Table 2** (following text) contains a summary of the second-half results. **Table 3** (following text) contains a summary of historical and current VOC detections. **Attachment A** contains laboratory sheets and field data; **Attachment B** contains time-series graphs of general mineral parameters. Tables for historical data are presented in **Attachment C**.

As early as 1987, groundwater quality impacts from site operations were noted. The impacts were attributed to different site operations, including the now-closed sludge and whey ponds, and the landfill itself. Closure of the various ponds and capping the landfill, however, has improved groundwater quality in almost all locations.

SOUTHEAST TO SOUTHWEST OF LANDFILL MOUND

Figure 4 shows TDS time-series graphs for the E-1 pair, E-2 Deep, SM-6, W-2 Deep, W-3S, and W-8 Shallow, located on the generally southeast to southwest sides (downgradient and crossgradient) of the Landfill.

In the E-1 pair, TDS increased in the period 1996 through 2009, but has decreased since 2009, especially in the shallow aquifer. The overall increase between 1996 and 2015 is statistically significant at the 95% level (statistical sheets are in Attachment A in the MRP Update Report). Since closure (2006 to present), TDS in both E-1 wells is decreasing, although the decrease is not statistically significant and E-1 Deep has shown a higher TDS periodically in the last three years. TDS value in the shallow aquifer at E-1 was at 336 mg/L in second-half 2018.

Southeast and immediately adjacent to the landfill, shallow well SM-6 shows a statistically significant decreasing trend for TDS for 1995 through 2015; TDS has remained stable for the last two years. TDS in SM-6 was at 251 mg/L in second-half 2017. Well E-2 Deep shows no significant trend for its period-of-record (2007 to present). TDS in E-2 Deep was at 353 mg/L in second-half 2018.

Well SM-6 had detections of relatively high concentrations of toluene between September 2012 and September 2013 (see below); toluene was nondetected in November 2014 and March 2015, but detected again in August 2015 and January 2016. Toluene has been nondetected since January 2016. VOC have been nondetected since 2017 (after well repair and redevelopment).

At the immediate southwestern corner of the Landfill, well W-2 Deep is the only site well that showed an increasing trend after closure, through early 2016. This location is very close to the landfill, and the groundwater level here likely is very close to the bottom of waste. VOC have only been detected in W-2 Deep once, in August 2009 (hexachloroethane at 110 µg/L). This detection may reflect non-landfill influence because hexachloroethane also was detected at exactly 110 µg/L in five of the site wells on the same date; it seems unlikely that contamination derived from the landfill would show the same concentration in five wells on the same date.

As described above, it appears that surface water had been entering the casing of W-2 Deep. Surface-water inflow should cease because the casing was extended and a water-tight cap was installed during second-half 2016. Data suggest that this work may have been effective in slowing or stopping the increasing trends, as the concentrations of several parameters (alkalinity, bicarbonate, calcium, conductivity, hardness, magnesium, and TDS) have declined or stabilized since then (see graphs in **Attachment B**).

The two shallow wells in the area southwest of the Landfill mound, W-3 Shallow and W-8 Shallow, are upgradient and crossgradient of the Landfill mound, respectively, although W-3 Shallow is downgradient of former waste ponds. For the period 1988 through 2015, W-3 Shallow showed a significant decreasing trend and W-8 Shallow showed no significant trend. This is consistent with W-3 Shallow being downgradient of the former ponds. After their closure, it would be expected that downgradient groundwater quality would improve. W-8 Shallow is crossgradient of former and current Landfill features, so it would be expected that groundwater quality would remain stable at that location. The most recent TDS concentrations in these wells are approximately 100 to 200 mg/L. VOC have been nondetected in W-3 Shallow for the last six years; VOC have always been nondetected in W-8 Shallow.

NORTHEAST TO NORTH OF LANDFILL MOUND (TOWARDS RESIDENTIAL AREA)

Figure 5 shows the time-series graphs for wells northeast to north of the Landfill mound, directly between the Landfill and the closest neighboring wells which are to the northeast of the Landfill property. Monitoring wells between the Landfill and the neighbors are the E-3 and E-4 pairs. The E-3 pair has been monitored since 1996; the E-4 pair was installed in early 2014, and has a limited number of data points.

Looking at TDS from the period-of-record shows that values were higher in both E-3 Shallow and Deep before closure. Before closure, TDS ranged near or above 1,200 mg/L periodically in these wells. Since closure, TDS has decreased and generally is near or below 300 to 400 mg/L currently. The decreasing trends in these wells since closure is statistically significant.

Both wells have had periodic detections of VOC, although all VOC have been nondetected in E-3 Shallow for the last nine years. In E-3 Deep, there were occasional detections of chloroethene, at 1 to 2 µg/L, between 2002 and 2013. Methyl tert-butyl ether (MTBE) was detected in E-3 Deep in 2002 (6.4 µg/L), 2009 (0.52 µg/L), and 2014 (0.74 µg/L). Tert-butyl alcohol (TBA) was detected in E-3 Deep in August 2014 at 13 µg/L. No VOC have been detected in either E-3 Shallow or Deep since 2017. Constituents-of-concern (COC) are analyzed every five years; to date, COC have been analyzed twice since the landfill closure construction was completed, in 2009 and 2014. **Table 3** (following text) summarizes historical organic compound detections.

In the E-4 Shallow and Deep pair, TDS has declined over the period 2014 through 2017. MTBE and TBA were nondetected in the shallow aquifer. In the deep aquifer, MTBE was detected at 0.6 µg/L and TBA at 6.9 µg/L in August 2014. No VOC have been detected in the E-4 well pair since 2017.

At the immediate northern edge of the Landfill mound and crossgradient of the waste, the 6-E Shallow and 6-W Deep pair show no significant trends in TDS for the period-of-record. Since closure, however, both show significant decreasing trends. Over the last five years, TDS has hovered around 200 mg/L for both wells. VOC have always been nondetected in 6-E Shallow; VOC have not been detected since 2001 in 6-W Deep.

In the shallow aquifer farther north and crossgradient of the Landfill mound, well W-10 Shallow shows no significant trends for TDS, although there are distinct seasonal variations in TDS concentrations. TDS generally ranges between 100 and 300 mg/L, seasonally. VOC have always been nondetected.

UPGRADIENT OF LANDFILL MOUND

Figure 6 shows the time-series graphs for wells upgradient of the Landfill mound. The well pair W-1E Deep and W-1W Shallow historically showed relatively high TDS concentrations (500 to 800 mg/L) which were related to the previous waste ponds. After closure of the waste ponds, TDS in this well pair decreased almost immediately, and has remained relatively constant since that time. The most recent TDS values generally are less than 150 mg/L for the deep aquifer and less than 200 mg/L for the shallow aquifer. VOC have always been nondetected in this well pair.

Well SM-7, in the shallow aquifer to the north of the W-1E/W-1W pair, shows a similar pattern. Historic TDS values were as high as 1,200 mg/L because SM-7 was near former waste ponds. After closure, TDS decreased immediately, and since 2006 has been stable, ranging from 100 to 150 mg/L. There was one VOC detection in 2009 (hexachloroethane at 110 µg/L); as discussed above, it is likely that the hexachloroethane detection in 2009 represented outside contamination of some sort, not aquifer conditions. VOC have not been detected since second-half 2017.

Upgradient of the Landfill mound and generally outside of the influence of other Landfill features, the W-9 Shallow/Deep well pair has shown consistent water quality since 1997. For that period, TDS in the shallow aquifer here has been consistently just over 240 mg/L. In the deep aquifer, TDS has shown more variability than in the shallow aquifer, ranging between 100 and 250 mg/L. VOC always have been nondetected in this well pair.

COMPARISON TO GROUNDWATER LIMITS

Table 2 (following text) shows the previously established groundwater limits for the shallow aquifer; limits were not established for the deep aquifer.² Of the analyzed parameters, which also have limits, only SM-6 Shallow (downgradient of the landfill) showed an exceedance, for manganese (1.0 mg/L, exceeding the limit of 0.6 mg/L).

LANDFILL GAS

DNSWMA staff conducted landfill gas monitoring in November 2018, for oxygen, methane, hydrogen sulfide, and carbon monoxide. The field log for gas monitoring is included in **Attachment A**. Methane was non-detected in all probes and oxygen content was at or near atmospheric concentrations (approximately 12.8 to 20.9%).

Methane has always been nondetected and oxygen has always been at or near atmospheric concentrations in the compliance probes. There has never been evidence of landfill gas at the property boundary.

In the probes immediately adjacent to the waste, methane had been detected periodically over the last six years in probes G1, G5, G6, G7, and G16 (note that a G designation has been added to the gas probe names herein, for ease of reference and to avoid confusion with groundwater well names; we are not proposing to change the names of any of the probes). **Figures 2 and 3** show probe locations.

² March 27, 1996, rev. October 14, 1996, Winzler & Kelly, *Technical Memorandum – Deliverable for Tasks 2, 3, and 4 of Article 5 Compliance Documents*.

TABLE 1
Summary of Current Water-Level Data, Crescent City Landfill

WELL	DATE	TOP OF CASING ELEVATION	DEPTH TO WATER	GROUNDWATER ELEVATION
		feet MSL	feet TOC	feet MSL
E -1 Deep	10/3/2018	50.63	29.45	21.18
E -1 Shallow	10/3/2018	52.76	29.55	23.21
E - 3 Deep	10/3/2018	56.54	34.40	22.14
E - 3 Shallow	10/3/2018	57.65	32.30	25.35
W-6W Deep	10/3/2018	47.03	14.59	32.44
W-6E Shallow	10/3/2018	47.06	13.50	33.56
E-2 Deep	10/3/2018	26.86	27.65	-0.79
SM-6 Shallow	10/4/2018	28.57	7.85	20.72
W-8 Shallow	10/3/2018	53.58	28.35	25.23
W-9 Deep	10/3/2018	61.07	24.70	36.37
W-9 Shallow	10/3/2018	53.13	12.33	40.80
W-1E Deep	10/3/2018	52.71	19.13	33.58
W-1W Shallow	10/4/2018	52.50	11.92	40.58
W-2 Deep	10/4/2018	32.77	6.50	26.27
W-3S Shallow	10/4/2018	43.76	8.05	35.71
W-10 Shallow	10/4/2018	45.42	10.50	34.92
SM-7 Shallow	10/4/2018	50.38	10.70	39.68
E-4 Shallow	10/3/2018	58.34	33.20	25.14
E-4 Deep	10/3/2018	57.94	Not Measured	

Well ID	Chloride (mg/l)	Sulfate (mg/l)	Alkalinity (mg/l)	Conductivity (umhos/cm)	pH (units)	Nitrate (mg/l)	Fluoride (mg/l)	Bicarbonate (mg/l)	Carbonate (mg/l)	COD (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Manganese (mg/l)	Potassium (mg/l)	Sodium (mg/l)	Hardness (mg/l)	Zinc (ug/L)	Arsenic (ug/L)
102	49	<0.50	250	711	7.20	<0.10	<0.10	250	<1.0	26	34	45	1.5	4.5	30	270	22	<5
136	34	<0.50	160	472	7.10	<0.10	<0.10	160	<1.0	10	16	24	0.29	10	13	140	<10	<5
114	42	<0.50	390	730	7.90	<0.10	<0.10	390	2.9	<5.0	88	68	0.57	3.6	22	500	<10	32,000
136	21	<0.50	290	633	7.30	<0.10	<0.10	290	<1.0	13	55	31	1.1	8.7	27	270	12,000	5,400
156	14	3.6	260	497	7.90	0.42	<0.10	260	<1.0	9.5	83	22	0.019	4.7	15	300	<10	<5

NOT SAMPLED - PUMP MALFUNCTION

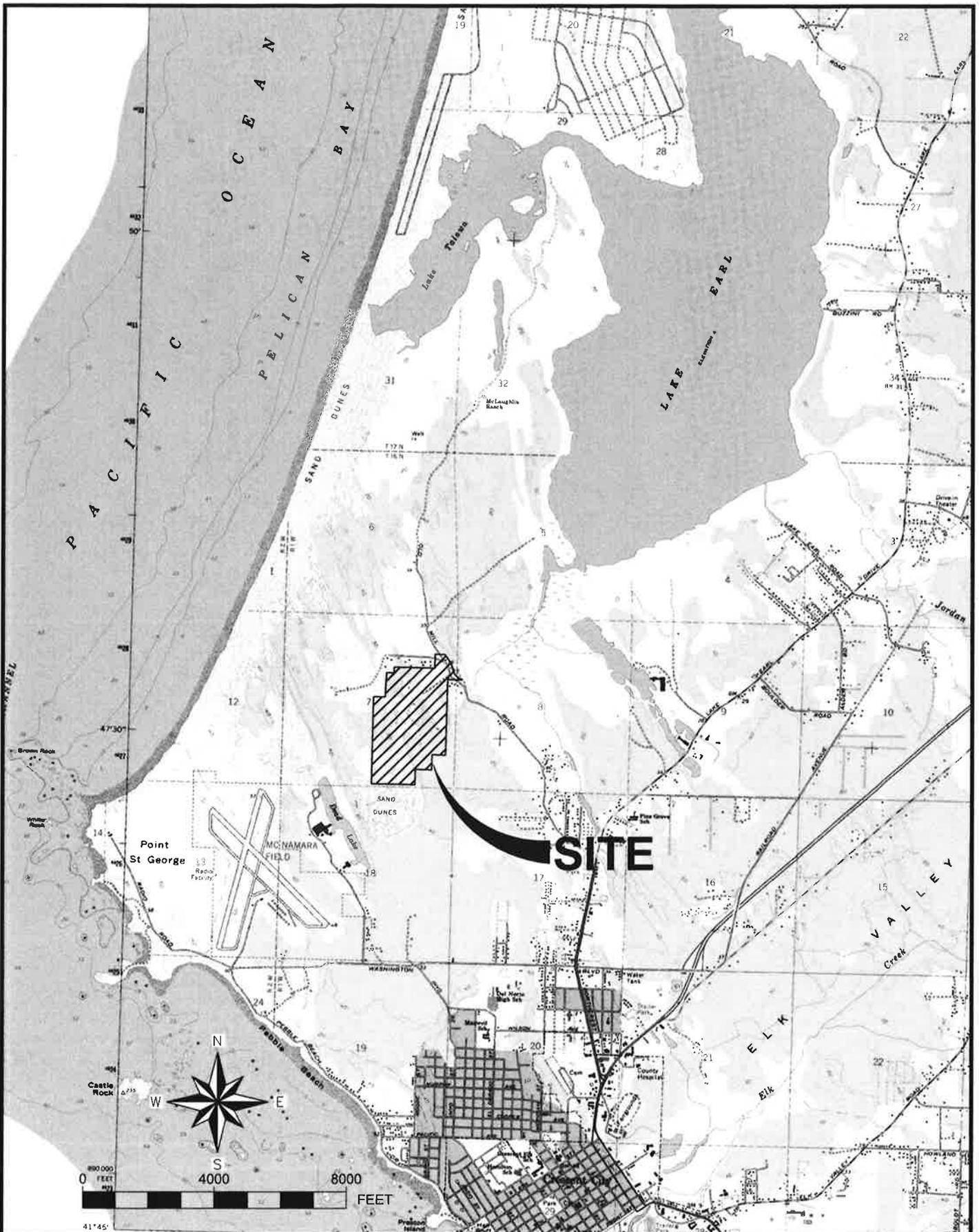
112	14	6.1	190	437	7.70	0.45	<0.10	190	<1.0	<5.0	54	23	0.18	2.9	6.9	230	<10	<5
178	23	5.0	100	299	8.20	<0.10	<0.10	100	1.5	14	26	15	1.2	0.76	12	130	<10	5.8
156	28	<0.50	120	356	7.50	<0.10	<0.10	120	<1.0	8.9	35	12	0.12	1.2	12	140	<10	<5
137	150	<0.50	410	898	7.40	<0.10	<0.10	410	<1.0	22	110	110	6.8	0.82	19	710	10	17
103	24	2.2	100	308	8.20	<0.10	<0.10	100	1.5	79	24	20	0.28	1.4	12	140	<10	19
106	13	<0.50	120	300	7.80	<0.10	<0.10	120	<1.0	12	19	17	0.11	0.84	12	120	<10	<5
149	16	<0.50	130	333	7.20	<0.10	<0.10	130	<1.0	15	13	27	0.29	1.0	14	140	22	<5
172	11	<0.50	82	196.3	7.80	<0.10	<0.10	82	<1.0	<5	13	12	0.026	0.69	6	83	<10	<5
115	13	1.4	63	206	7.50	<0.10	<0.10	62	<1.0	15	4.9	17	0.084	1.1	6.1	81	<10	9.8
195	22	<0.50	170	416	7.50	<0.10	<0.10	170	<1.0	17	55	12	0.19	1.1	14	180	13	5.9
193	26	6.0	180	420	8.40	<0.10	<0.10	180	4.2	20	45	14	0.2	1.1	21	170	10	<5
153	21	<0.5	240	500	7.00	<0.10	<0.10	240	<1.0	55	58	30	1.0	5.6	14	270	520	<5
178	15	2.2	93	250	8.00	<0.10	<0.10	92	<1.0	<5.0	14	13	0.07	5.9	6.3	87	13	<5
170	11	11.3	113	518	8.40	<0.10	n/a	n/a	n/a	55	7.9	28	0.3	12	16	140	96	5
141	11	11.3	113	918	6.90	<0.10	n/a	n/a	n/a	330	51	32	0.71	7.4	13	260	34	<5
156	11	11.3	113	503	8.60	0.22	n/a	n/a	n/a	13	23	24	0.17	2.2	12	160	17	<5
160	134	18	NE	960	6.7 - 9.3	NE	NE	272	NE	241	93	42	0.6	NE	42	NE	NE	NE

Volatile Organic Compounds

# VOC species detected	1,1,1,2-Tetrachloroethane	1,4-Dichlorobenzene	Acetone	Benzene	Chloroethane	Chloromethane	Dichlorodifluoromethane	Ethylbenzene	Hexachloroethane	Xylenes	Methylene chloride (dichloromethane)	MTBE	Tert-butyl alcohol	Toluene	TPH-Gas, Diesel, or Motor Oil	Vinyl chloride	
Parameter Analyzed -->	2019	2019	2016	2019	2019	2019	2019	2019	2014	2019	2019	2019	2019	2019	2016	2019	
Year Last Detected / Total Detections to Date																	
3	5		2014 / 1									2017 / 2	2014 / 1				
4	9	2013 / 1										2009 / 1	2009 / 1				2013 / 6
1	1								2009 / 1								
4	10			2005 / 2			2001 / 5					2009 / 2		2000 / 1			
6	27			2013 / 10			2001 / 5					2014 / 3	2014 / 1				2006 / 6
0	0																
2	2											2014 / 1	2014 / 1				
10	27	2001 / 1	2014 / 1	2016 / 1			2000 / 2		2009 / 1	2014 / 4	1995 / 1			2016 / 13	2014 / 1	1996 / 1	
2	2								2009 / 1					2017 / 1			
0	0																
0	0																
3	3								2009 / 1		1995 / 1			2006 / 1			
1	2	2001 / 1															
0	0																
1	1	2001 / 1															
0	0																
0	0																
0	0																
0	0																
9	17		2014 / 2	2013 / 2				2013 / 1	2009 / 1	2013 / 3		2014 / 2	2014 / 2	2013 / 2	2009 / 1		
2	14		2016 / 11												2014 / 2		
1	4		2015 / 4														

ected.

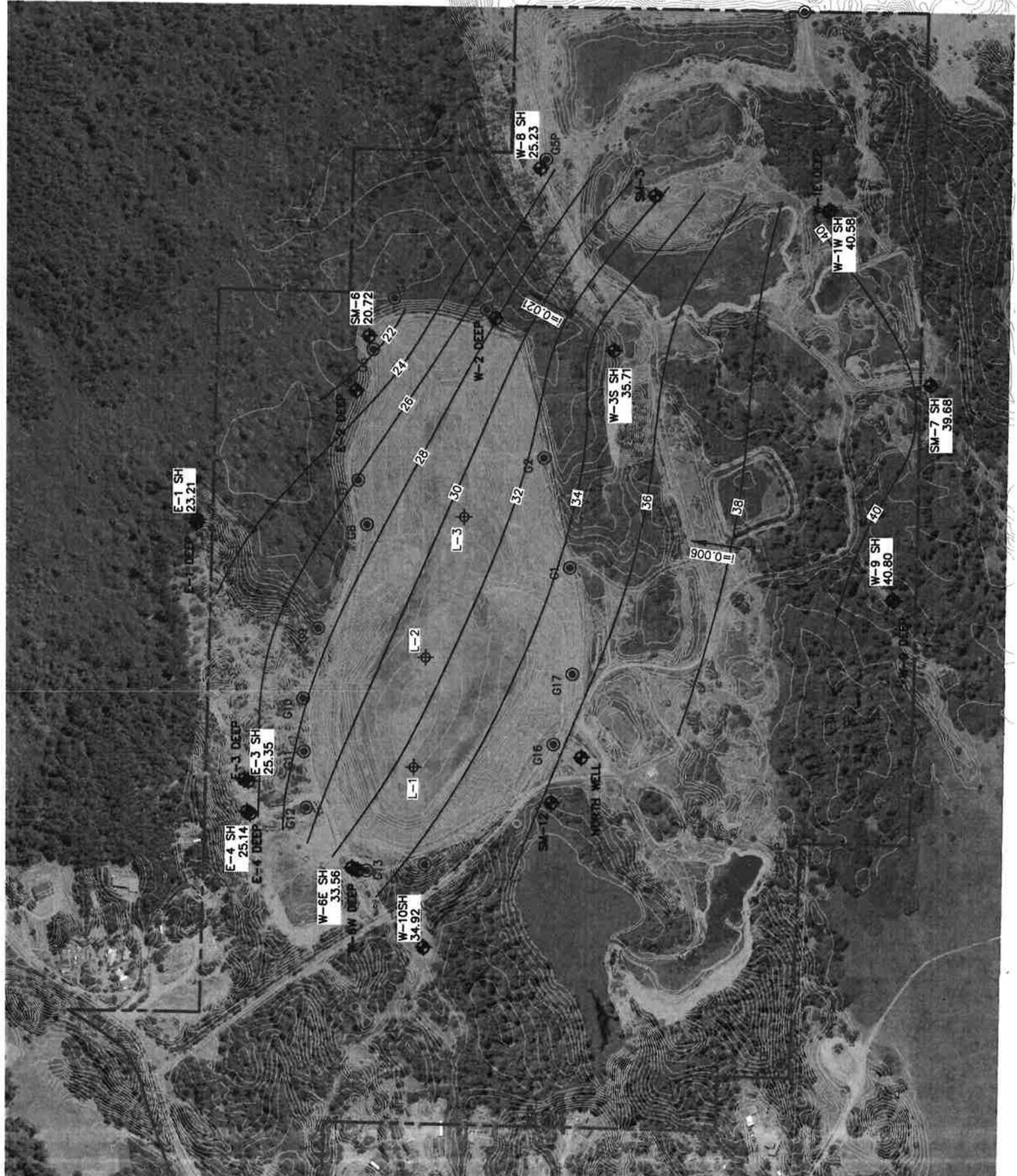
detections in 2009 were all on the same date (08/25/09) and all showed the same value (110 ug/L); this suggests non-landfill influence on the samples, not landfill contamination.



SITE LOCATION MAP
 ADAPTED FROM USGS 15-MINUTE
 TOPOGRAPHIC QUADRANGLE: CRESCENT CITY

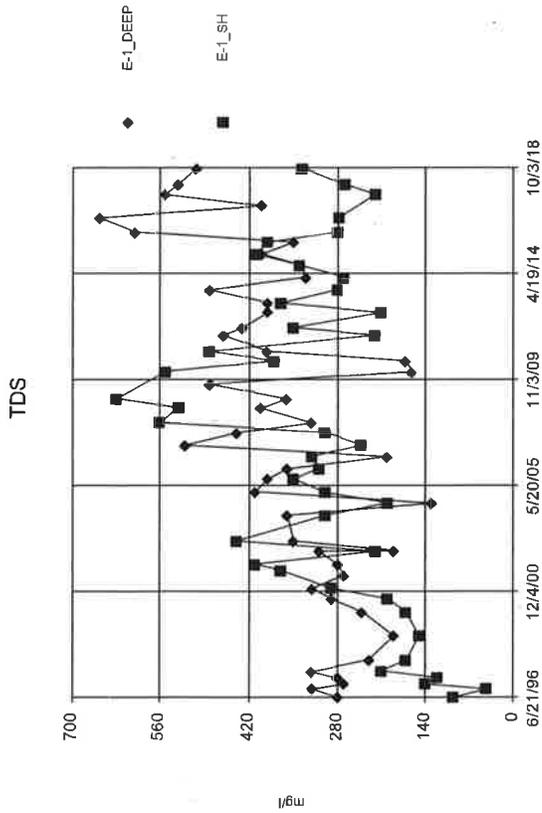
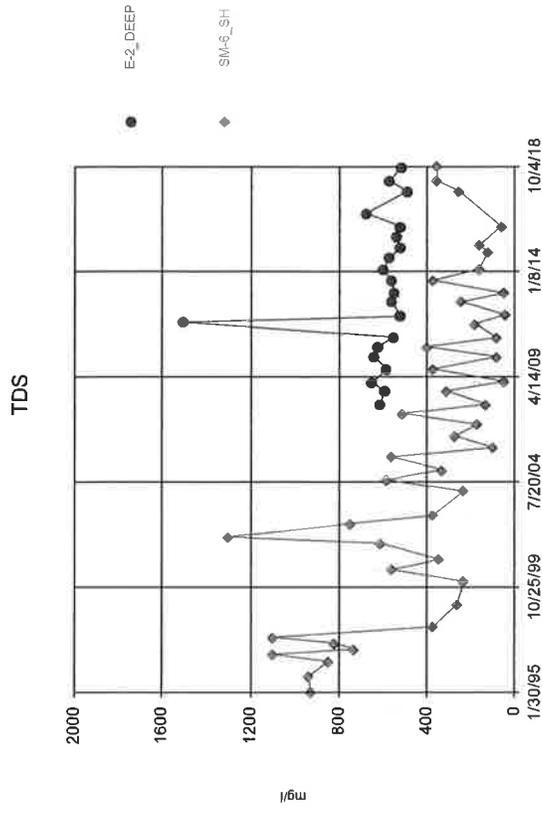
PROJECT NAME: CRESCENT CITY LF	PROJECT NO: 015063.00	DATE: 11/22/2018
CLIENT: DNSWMA	DRAWN BY: J. BEERS	FIGURE 1
SCALE: 1" = 4000'	CHECKED BY: B. LAMPLEY	

- LEGEND**
- ◆ E-1 SH 23.21
 - G1
 - ⊕ L-1
 - 36
 - ↗ i=0.006



Case to Southeast of Landfill

WQStat Plus™ v.9.4.41



WQStat Plus™ v.9.4.41

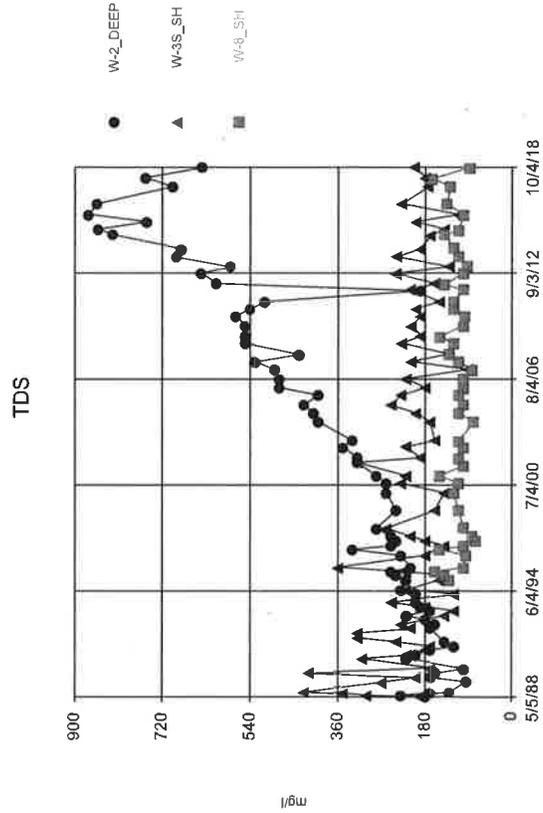
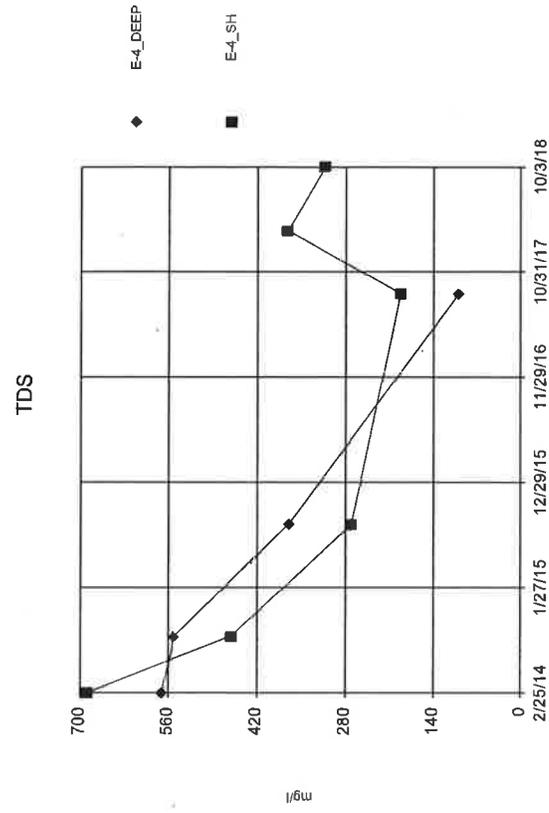


FIGURE 4

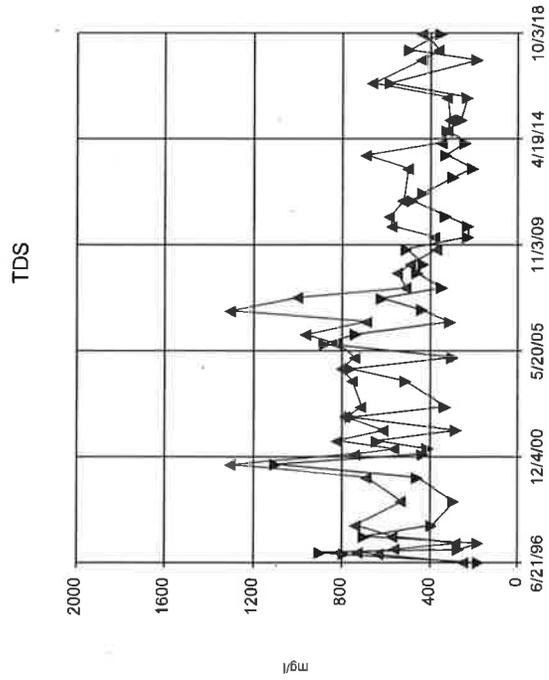
Northeast of Landfill

WQSBatPlus™ v9.4.41

WQSBatPlus™ v9.4.41



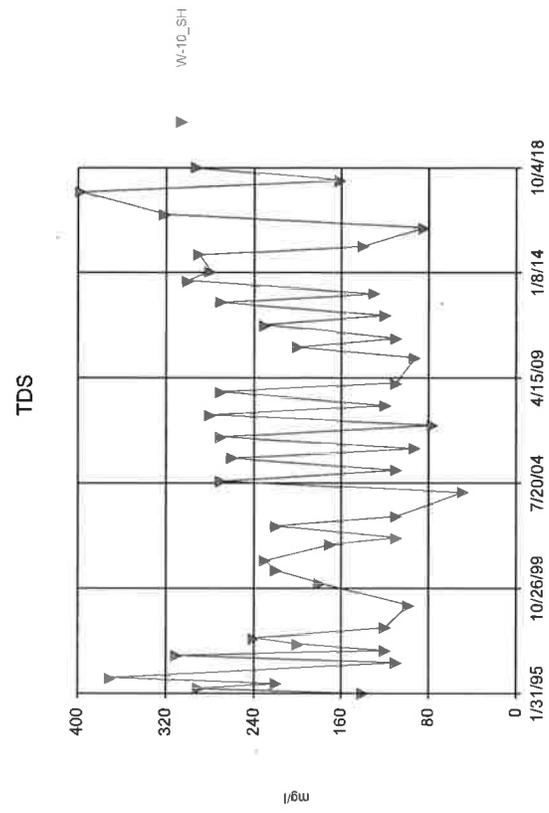
Time Series Analysis Run 2/19/2019 4:28 PM
Facility: Crescent City Landfill Data File: CCLF_Stats



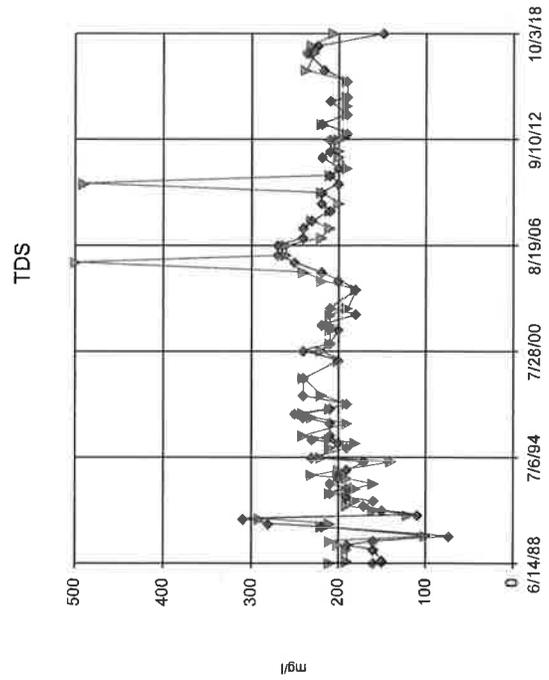
Time Series Analysis Run 2/19/2019 4:28 PM
Facility: Crescent City Landfill Data File: CCLF_Stats

WQSBatPlus™ v9.4.41

WQSBatPlus™ v9.4.41



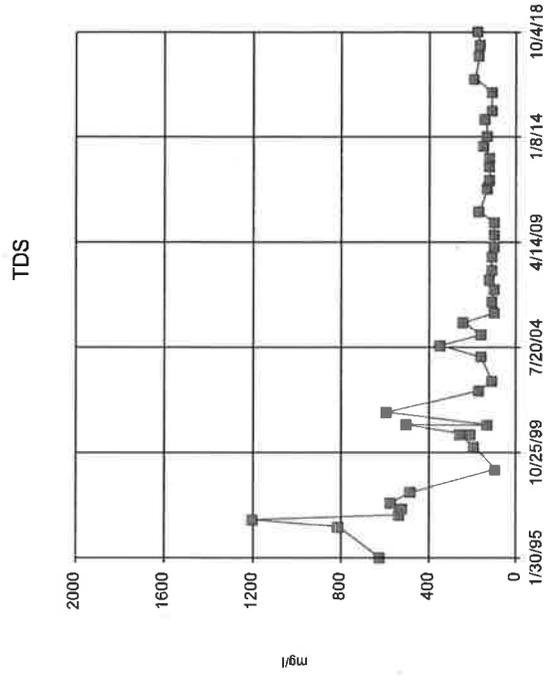
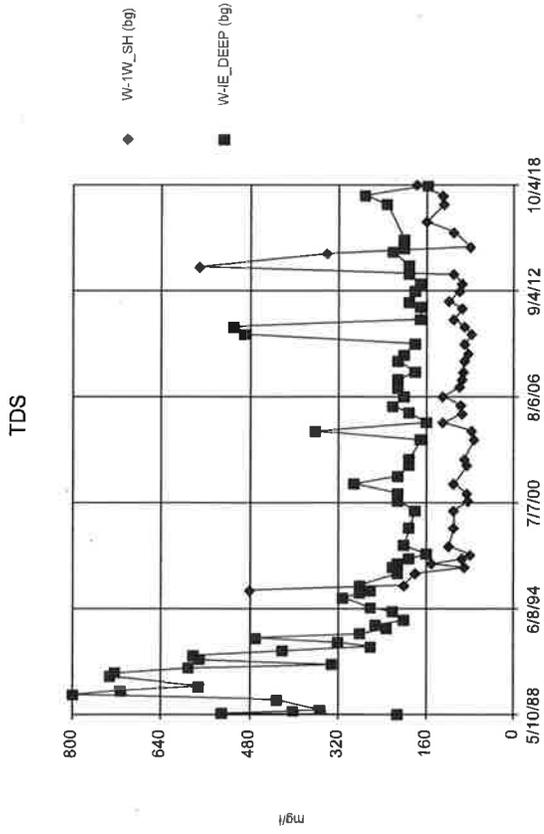
Time Series Analysis Run 2/19/2019 4:28 PM
Facility: Crescent City Landfill Data File: CCLF_Stats



Time Series Analysis Run 2/19/2019 4:29 PM
Facility: Crescent City Landfill Data File: CCLF_Stats

Upgradient of Landfill

WQStat Plus™ v.9.4.41



WQStat Plus™ v.9.4.41

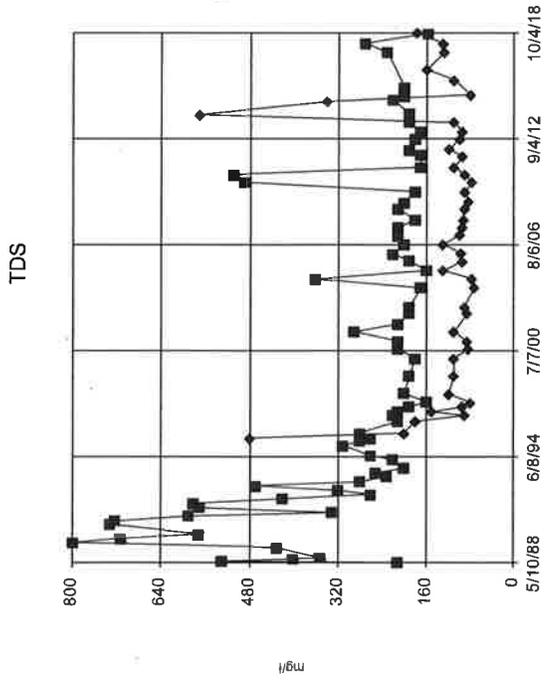


FIGURE 6

ATTACHMENT A
FIELD DATA & LABORATORY SHEETS

Source Pump	Description for Final map	NEW Measured Depth	Measured Depth feet	PURGE VOLUME	Date	Time	Initials of sampler	Temp °F	Specific Conductance (uS)	pH	Salinity	tds	Comments / Flow
gw/d	E-1 DEEP	56.25	29.45	53	10-3-16	1:25	KS&EL	53.1	711	7.2	324	502	
gw/d	E-1 SH	33.08	29.55	7		11:35	KS&EL	52.6	432	7.1	213	336	Dry @ 5
gw/d	E-2 DEEP	45.30	27.65	55.1		3:00	KS&EL	56.5	730	7.9	327	514	
gw/d	E-3 DEEP	58.60	34.4	48		10:36	KS&EL	56.2	633	7.3	287	436	
gw/d	E-3 SH	36.55	32.3	8		11:16	KS&EL	55.2	497	7.5	225	356	
gw/d	E-4 SH	39.40	33.2	12		11:00	KS&EL	55.9	437	7.7	192	312	Dry @ 5
gw/d	E-4 DEEP	69.97					KS&EL						hose 700-1001
gw/d	W-1E DEEP	49.65	19.13	61.04		1:50	KS&EL	53.1	356	7.5	156	252	Dry @ 19
gw/d	W-6W DEEP	45.45	14.59	62	10-3-18	9:14	KS&EL	53.1	233	7.2	149	236	Dry @ 25, 16
gw/d	W-6E SH	37.00	13.50	53	10/3	9:30	KS&EL	53.1	300	7.8	131	206	
gw/d	W-8 SH	39.18	28.55	22		1:12	KS&EL	58.2	176.3	7.8	87.2	141	
gw/d	W-9 DEEP	68.95	24.70	88.3		2:10	KS&EL	53.5	416	7.5	185	295	
gw/d	W-9 SH	20.52	12.33	16.4		2:40	KS&EL	52.5	206	7.5	91.5	146	
gw/m	W-1W SH	19.21	11.92	14	10-4	12:50	KS&EL	55.2	299	8.2	122	178	
gw/m	W-2 DEEP	25.35	6.50			10:40	KS&EL	53.5	898	7.4	416	631	Dry @ 11 6
gw/m	W-3S SH	21.00	6.05	26		11:25	KS&EL	51.2	308	8.2	46	203	
gw/m	W-10 SH	14.00	10.50	7		10:20	KS&EL	56.2	420	8.4	181	293	
gw/m	SM-7 SH	18.54	10.70	15.3		11:10	KS&EL	54	250	8.0	112	178	
gw/hose	SM-6 SH	13.00	7.55			1:15	KS&EL	58	500	7.0	228	353	Dry @ 5, 2, 1, 5, 1, 5, 1, 5, 1, 5
hose	L-3	60.91					KS&EL						
sw	S-1 Surface				10-10	1:40	KS&EL	56.1	518	8.4	167	370	
sw	S-2 Surface					12:05	KS&EL	46.4	918	6.9	292	641	
sw	S-3 Surface					1:25	KS&EL	46-	503	8.6	158	356	

29
15

Handwritten scribbles and marks.



**NORTH COAST
LABORATORIES LTD.**

October 24, 2018

Del Norte Solid Waste Authority
1700 State Street
Crescent City, CA 95531

Attn: Tedd Ward

Order No.: 1810099
Invoice No.: 142913
PO No.:
ELAP No.1247-Expires July 2020

RE: Groundwater CCLF

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	E-1 Deep
01C	E-1 Deep
01D	E-1 Deep(DISSOLVED)
01E	E-1 Deep
02A	E-1 Shallow
02C	E-1 Shallow
02D	E-1 Shallow(DISSOLVED)
02E	E-1 Shallow
03A	E-2 Deep
03C	E-2 Deep
03D	E-2 Deep(DISSOLVED)
03E	E-2 Deep
04A	E-3 Deep
04C	E-3 Deep
04D	E-3 Deep(DISSOLVED)
04E	E-3 Deep
05A	E-3 Shallow
05C	E-3 Shallow
05D	E-3 Shallow(DISSOLVED)
05E	E-3 Shallow
06A	E-4 Shallow
06C	E-4 Shallow
06D	E-4 Shallow(DISSOLVED)
06E	E-4 Shallow
07A	W-1E Deep
07C	W-1E Deep
07D	W-1E Deep(DISSOLVED)
07E	W-1E Deep
08A	W-6W Deep

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

Approved for release by:

Roxanne Moore, Project Manager



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531
Phone (707) 465-1100 Fax (707) 465-1300
www.recycledelnorte.ca.gov

The Authority's mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

Staff Report

Date: 20 February 2019
To: Commissioners of the Del Norte Solid Waste Management Authority
From: Tedd Ward, M.S. - Director *Tedd*
File Number: 230502, 160102, 151801
Attachments: Aerial photo with property lines along NW corner of landfill
Topic: Authority Property Ordinance

Recommendation: That the Board direct staff to work with legal counsel, the County Code Enforcement officer and others as needed to draft an Authority Ordinance for elevated penalties to deter illegal dumping, vehicular trespass, and property damage on Authority-managed properties including the Crescent City Landfill, the Klamath Transfer Station, the Gasquet Transfer Station, community drop-off recycling locations, and possibly including the area around streetside trash and recycling bins. Staff would return to the Board with a draft Ordinance for the Board's consideration. Prior to being enacted, such an Ordinance would also need to be publicly noticed and ratified by both the Crescent City Council and the Del Norte County Board of Supervisors.

Background: Staff have been meeting with the County Code Enforcement Officer as well as representatives from Pacific Power and State Parks to discuss ways to stop the vehicles driving on and across the Crescent City Landfill property. Under a CalRecycle Cleanup Grant, the County has some resources to clean up some areas that have been illegally dumped upon, and to impede vehicle access to prevent further dumping.

Though the landfill mound is just 23 acres of the 167 acre site, vehicles and people seeking vehicle access have damaged the fences, gates, the landfill mound, and drainage structures on the landfill property.

On 20 February 2019, County Engineering Tech Eric Lauchstedt uncovered three survey markers confirming that at least one of the residential wells near the landfill is actually drilled on the County landfill property managed by the Authority. During this site visit, staff observed that there is currently a tow-behind camper and an abandoned boat and trailer on County property adjacent to these residential properties. Active burn piles and other debris were found both immediately next to the residential well on the landfill

property and other areas near the property boundaries. Also staff have noticed trees have been illegally cut down on immediately adjacent State Parks properties while a new rough-hewn pole barn has been erected on one of the adjoining properties.

Analysis: Though Authority staff are planning to work with the County to have rocks or other barriers placed in areas currently being accessed, the prospect of fencing or blocking the entire perimeter appears both impractical and expensive.

During the planning meetings, Parks staff suggested that if there was an Ordinance with elevated penalties for these vehicular and dumping activities, Parks staff would be happy to help enforce such an Ordinance.

According to the County Community Development Director, the County does not have other properties that have the same level of ongoing concerns and expenses associated with dumping and trespass. She suggested that it would make more sense for the Authority to adopt such an Ordinance, and it could apply to all properties managed by the Authority or used by the Authority's Transfer Station Operations and Collections Franchise contractors. Such an Ordinance could have elevated penalties for infractions at the Crescent City Landfill, the Del Norte County Transfer Station, the Klamath Transfer Station, the Gasquet Transfer Station, the community drop-off locations, and the streetside trash and recycling bins.

Once adopted, the Authority could have 'No Trespassing / No Dumping' signs made and post them around the likely access points on each property.

Alternatives: 1. The Board could take no action. Staff could still post 'No Trespassing / No Dumping' signs, though they might be less effective.

2. The Board could direct staff to present a wider variety of alternatives to impede and reduce vehicular trespass and dumping on Authority-managed properties.

Fiscal Impacts: Drafting an Ordinance is relatively inexpensive (staff, legal, and public notice expenses). Costs to print and post signs are not impacted by which Ordinance is referenced.

Related Issues: Such an Ordinance could be used as an additional tool to reduce dumping and trash contamination in Recology Del Norte's recycling programs at the community dropoff bins and the streetside containers.



110-020-75
(D.N. COUNTY)

OLD MILL ROAD

HIGHTS ACCESS ROAD

FD CAPPED STL
ROD (AXLE?)

FD ALUM MON

110-140-23
(DEPEE)

110-020-75
(D.N. COUNTY)

110-140-24
(DEPEE)

110-140-27
(KINIKIN)

FD ALUM MON
(NOT TIED)

110-020-76
(D.N. COUNTY)

110-020-77
(STATE OF CALIF.)





February 19, 2019

Tedd Ward, Director
Del Norte Solid Waste Management Authority
1700 State Street
Crescent City, CA 95531

Dear Mr. Ward:

As per Section 7.02.A of the current Franchise Agreement, Recology is submitting a written application for the rate adjustment effective July 1, 2019. The adjustment will be based on the February CPI index. The February 2018 index will not be available until March 12, 2019. Therefore, we are requesting rates be adjusted based on the upcoming index and that the new per ton tipping fee be factored in. Please consider this letter to be our application for rate adjustment for the period 7/1/19 to 6/30/20. We request a copy of the Authority's rate calculations as soon as they are available so that we may review them for accuracy.

In addition, all required quarterly reports have been provided to the Authority as required under Section 5.17 of the current Franchise Agreement.

If you have any questions or require any additional information regarding this application, please contact me at 464-4181.

Thank you for your attention to this matter. We look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Herber', is written over a light blue horizontal line.

Jeremy Herber
General Manager

Cc: Ed Farewell
Tom Norris
Nikki Burke

4.1



Hambro/WSG

PO Box 159
Crescent City, CA 95531

Phone 707-465-4656
Fax 707-465-4670

February 20, 2019

Tedd Ward, Director
Del Norte County Solid Waste Authority
1700 State Street
Crescent City, CA 95531

As per our Agreement dated March 3, 2003, Hambro/WSG is respectfully submitting a request for a CPI adjustment for solid waste.

The CPI increase should cover all areas of our agreement, Operations, Transport and Disposal for the 2019/2020 period.

Rogue Compost recently informed us that an increase in green waste would be necessary in the future due to market conditions affecting the composting industry. Yesterday we received notification from that commencing July 1, 2019 the green waste material delivered to Rogue Compost will increase \$10 per ton, increasing July 1, 2020 to \$15 per ton and July 1, 2021 \$20 per ton.

Hambro will continue to seek other opportunities utilizing all recyclable waste materials. It is an interesting time in the development of waste stream management, and we will continue to explore all possible solutions.

Respectfully submitted,

Joel Wallen, General Manager
Hambro WSG, Inc.



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531

Phone (707) 465-1100 Fax (707) 465-1300

www.recycledelnorte.ca.gov

The Authority's mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

Staff Report

Date: 11 February 2019
To: Commissioners of the Del Norte Solid Waste Management Authority
From: Tedd Ward, M.S. - Director
File Number: 142016 – Northern Transfer Station
Attachments: Proposals submitted by
1) Stillwater Sciences, 2) GHD, and 3) Planwest Partners
Proposal Evaluation Form

Topic: Contractors to Assist with Site Assessment and Environmental Review for a Northern Transfer Station

Recommendation: That the Board direct staff to work with legal counsel and negotiate a professional services agreement with Stillwater Sciences to complete the scope of work for an amount not to exceed \$29,767.

Background: On 30 November 2018, the Request for Proposals for Site Identification, Assessment, and Environmental Review for a Small Volume Transfer Station to serve the communities of Smith River, the Tolowa Dee-ni' Nation and Fort Dick was mailed to eleven firms and individuals.

Three proposals were received before the submittal deadline of 28 January 2019.

Analysis: The attached spreadsheet summarizes staff evaluation of the three proposals submitted. GHD's proposal was technically very strong, and their team leader had a depth of relevant experience. Planwest Parnters capably provide services to the LAFCO agencies in Humboldt and Del Norte, and they included a price for a completed CEQA document as an optional proposal.

The proposal with the lowest price was also the highest scoring in the evaluation. Stillwater Sciences proposed initial deliverables ahead of schedule, All references said the proposing firms were professional, a good value, and would work with them again, though Stillwater Sciences references were slightly more relevant to this project.

Alternatives: The Authority could direct staff to contract with any of the three proposing firms.

Request for Proposals for Northern Transfer Station Site Assessment Services

Proposal Evaluation Form

	Weighting	Stillwater Sciences		GHD		Planwest Partners			
		Raw score	Evaluation	Comments	Raw score	Evaluation	Comments	Raw score	Evaluation
Project Schedule	5%	10	0.5	Sooner	8	0.4	8	0.4	
Technical Qualifications	15%	8	1.2		10	1.5	9	1.35	
Team Leader + Org Chart	5%	9	0.45		10	0.5	8	0.4	
References	20%	9	1.8		7	1.4	8	1.6	
Approach	20%	7	1.4		8	1.6	7	1.4	
Price Proposal*	35%	\$ 29,767	1.459		\$ 59,344	0.732	\$ 41,160	1.055	
Overall evaluation	out of 10		6.809			6.132		6.205	incl. CEQA
			Staff Recommendation				\$ 57,205.00		

* The evaluation for each price proposal is equal to the average of all price proposals divided by the price proposal times the weighting.



Site Identification, Assessment, and Environmental Review for a Small Volume Transfer Station

REQUEST FOR PROPOSALS

Prepared for
Del Norte Solid Waste Management Authority
1700 State Street
Crescent City, CA 95531

attn: Tedd Ward, Director
707-465-1100
tedd@recycledelnorte.ca.gov

January 28, 2019

Stillwater Sciences
www.stillwatersci.com

ORIGINAL

Section 1: Project Timeline & Price Proposal

Stillwater Sciences is committed to providing clients with objective and high quality, science-based solutions while controlling costs and meeting client needs within the project schedule. Our projects emphasize effective management (e.g., detailed budgeting, systematic billing, and project tracking), close client collaboration, efficient and experienced staff, and a strong commitment to overall project success. Our firm's particular strengths for the proposed project are our breadth of technical expertise (see Section 2), local knowledge and experience in the project area, and a proven track-record of success addressing difficult resource management issues on the north coast. Given our long history of working with public and private clients, we understand the need to meet project milestones and deliver within a specific timeframe, as we have for the projects outlined in Section 3. We value our clients and have been fortunate to sustain long-term, rewarding client relations.

Exhibit A: Project Timeline and Price Proposal

Task/Deliverable	Completion Date	Price Proposal
A A - First Tier Assessment & Maps	7-May-19 (7-April as alternative*)	A: \$4,615
B B – Second Tier Assessment		B: \$16,269
B1 - Assessment & Maps	4-Jun-19 (4-May as alternative*)	
B2 - Draft Initial Site Assessment Report	4-Jun-19 (4-May as alternative*)	
C1 - Negotiating Support	See below	
B3 - Final Assessment Report	9-Jul-19 (9-Jun as alternative*)	
B4 - Presentation to DNSWMA Board	16-Jul-19	
Selection of Target Properties by DNSWMA	20-Aug-19	
D D1 - Draft RFP for Design & Engineering	Based on delivery from Authority	D1: \$1,983
D2 - Proposed Amendment for Completion of Environmental Document (included in cost)	Concurrent and following completion of Task B	
C Hourly rate for Task C: \$115/hour x 60 hours	Ongoing	C: \$6,900
Total Price Proposal: A + B + D1 + C		\$29,767

* If desired by the Authority, Stillwater proposes an advanced timeline as an alternative for this task.

Section 2: Technical Qualifications

Experience

Stillwater Sciences is a 65-person scientific consulting firm with specialists in geology, geomorphology, environmental engineering and design, spatial analysis, wetland and restoration ecology, hydrology, terrestrial and aquatic biology, and water quality. Stillwater specializes in science-based technical approaches to environmental management, whether the project goal is site development, habitat restoration, or scientific investigation. We have extensive experience analyzing physical and biological resources throughout north coastal California. Our proposed project team has decades of local experience conducting every phase of development projects

including: initial site identification and assessment, engineering, design plans and specifications, environmental review and permitting, stakeholder engagement, construction oversight and monitoring, and as-needed mitigation design. Recent north coast project experience includes a site assessment and engineering design for a new road alignment at Rock Creek Ranch on the South Fork Smith River; a coastal resources assessment to demolish the Sierra Pacific Industries sawmill on Humboldt Bay; and a site evaluation, biological resources assessment, and engineering design for a large agricultural expansion in Honeydew, CA. These and other relevant projects are described in more detail below. Our staff regularly work on projects requiring environmental analyses compliant with the California Coastal Act (CCA), CEQA, and NEPA, federal and state permitting (404, 401, 1602, etc.), and associated studies and reports (engineering designs and grading plans, engineering geologic soils investigations, biological assessments, wetland delineation, etc.). Stillwater's familiarity with local regulatory requirements and our strong working relationships with state and federal government agencies allows our team to evaluate potential issues within the context of the current and future phases of a project. Stillwater often works within the urban-wildland interface of coastal communities, balancing infrastructure upgrades with ecological goals. Our breadth of expertise and local experience gives us a unique advantage in evaluating feasibility at early project stages to ensure permitting success and efficient constructability. The key staff proposed for this project are based in the Arcata office and routinely conduct the work to be performed.

Stillwater maintains a consistent level of long-term baseline work. At any given time, we are also working on numerous short-term, small budget, quick turn-around projects. For example, staff may be working periodically on a multi-year project (e.g., Klamath Dam Removal EIR, Humboldt Bay Power Plant decommissioning, Mid Klamath Floodplain Restoration feasibility study, etc.), while at the same time we have several 2- or 3-month-long environmental assessment projects or short-term consultations in the north coast region. We are able to efficiently balance field efforts and time for data analysis and report preparation due to the number of qualified staff, the depth of our staff experience, and the overlap of areas of expertise between staff. Having a diversity of skills enables us to effectively adjust workloads to meet project schedules.

Project Team

Managing the administrative and scientific aspects of the project in a timely manner is critical to project success and Stillwater staff is proficient at producing the highest quality products in a reasonable time frame. Our proposed project team conducts site assessments with consideration of both natural resources and community planning elements in evaluating feasibility and minimizing impacts through appropriate siting and design. Our project team possesses all the necessary qualifications, licenses, and permits, required to perform these services. Below we provide short biographies for the team with full resumes provided in Appendix A.



Dylan Caldwell, P.G., Project Manager/Geologist

Proposed Roles and Responsibilities: Site Identification, Assessment, Engineering Design RFP Development, and On-call Support



Dylan Caldwell is a California and Oregon licensed Professional Geologist with expertise in fluvial and hillslope geomorphology, hydrology, engineering and restoration geology, and the many ways that these disciplines interface with aquatic, riparian, and upland ecosystems. His experience comes from over a decade of research and consulting work in northern California and Oregon. Dylan manages or works as a lead staff on a variety of projects including site suitability assessments, engineering geologic soils investigations, topographic surveys, aquatic and riparian habitat restoration, engineering design, environmental analysis, and local, state, and federal permitting. Specific recent local examples include a site evaluation assessing soils and drainage at the Del Norte Food Council's Food Forest site in Crescent City, and an in-stream habitat restoration suitability and design project on lower Stotenburg Creek along Fred Haight Drive.

Prior to joining Stillwater Sciences, Dylan worked as a Staff Geologist with Busch Geotechnical Consultants in Brookings, OR. During that time, Dylan conducted engineering geology and geotechnical assessments throughout the Del Norte and Curry County coasts focused on site development suitability, slope stability, soil characterization, seismic hazards, groundwater conditions, erosion prevention and sediment control, engineering recommendations, stormwater runoff, and construction best management practices (BMP's).

Raised in Del Norte County, Dylan has extensive expertise with technical aspects related to geology and geomorphology across the proposed project area (i.e., the back edge of the coastal terraces and Smith River coastal plain). Dylan also owns a residence on the lower Smith River

near the project area that provides optional accommodation during multi-day project work in Del Norte and Curry Counties. This background gives Dylan unique knowledge of landowners, realtors, Tribal entities, and other County stakeholders; all of whom will likely be involved in some capacity during phases of this project.

Karley Rodriguez, GIS/Spatial Analyst

Proposed Roles and Responsibilities: Spatial Analysis and Cartography



Karley Rodriguez is a spatial analyst with expertise in geographic visualization, cartography, and data management. She works with Stillwater's interdisciplinary staff to manage GIS data and perform data analyses; produce maps and figures; and assist with field efforts. She vertically integrates many steps in the process, from initial data creation and analysis to the final production of deliverables. Karley provides GIS support for site evaluations which include geomorphic investigation, wetland delineation, special-status plant surveys, biological and physical surveys, and vegetation mapping. Recently for the Site and Biological Constraints Analysis for PG&E's Vierra Reinforcement Project (see Section 2 for further detail), Karley was the GIS lead, responsible for maintaining GIS data for the siting, routing, and constraints analysis, including queries of rare plant and animal databases, and the National Wetlands Inventory database. She prepared field maps, performed spatial analysis, and produced report figures.

Emily Teraoka, Coastal Ecologist/Permitting Specialist

Proposed Roles and Responsibilities: Site Assessment, Environmental Assessment, and Engineering Design RFP Development



Emily Teraoka is an ecologist with 17 years of experience conducting restoration site design and monitoring, special-status plant surveys, invasive plant surveys and assessments, and analyzing environmental impacts for regulatory purposes. She has worked on numerous permitting and regulatory compliance projects on the California north coast. Her technical expertise includes riparian and wetland plant ecology, vegetation mapping and special-status plant surveys, vegetation monitoring design and implementation, USACE-jurisdictional wetland delineation, and planning and permitting within the California Coastal Zone. Emily is a California Coastal Commission (CCC) and CDFW Designated Biologist, holds a CDFW Plant Voucher Collecting Permit, and is a trained practitioner in the California Rapid Assessment Methodology (CRAM) for wetlands monitoring/evaluations. Recently, Emily conducted botanical, vegetation mapping and wetland delineation surveys at the Sierra Pacific Industries' Arcata Division Sawmill. She developed a Coastal Resource Assessment in support of the California Coastal Commission's (CCC) Coastal Development Permit (CDP). This project description is provided below within the Reference section.

Joel Monschke, P.E., Civil Engineer*Proposed Roles and Responsibilities: Site Assessment and Engineering Design RFP Development*

Joel Monschke is a California and Oregon licensed Civil Engineer with expertise in engineering and construction, hydrology, hydraulics, geotechnical engineering, and engineering geomorphology. Joel has developed projects focused on upgrading public and private infrastructure, enhancing riparian and aquatic habitat, bank and landslide stabilization, hydrologic planning, flood mapping, and groundwater recharge. Joel has extensive experience performing field surveys, integrating field and LiDAR data in AutoCAD Civil3D and GIS, modeling hydraulics in HEC-RAS, developing conceptual to 100% designs for public works and restoration projects, integrating design and permitting phases to insure timely approval by resource agencies, and overseeing construction of small to expansive projects. He has considerable experience working collaboratively with landowners, stakeholders, agencies and biologic and geologic experts to develop suitable design alternatives that successfully lead to 100% designs. Joel recently performed a site evaluation and biological resources assessment across a 46.5-acre ranch which is a proposed site for agricultural expansion, requiring the development of buildings and water storage pond for irrigation use. He performed a site evaluation which included a topographic survey, geology/soils evaluation, vegetation assessment, wetlands and waters delineation, and special-status fish/wildlife evaluations.

Section 3: References

All of the projects described below were completed on time and within budget. We pride ourselves on having a significant number of repeat clients and partners, which is a testament to both our scientific credentials, as well as our ability to manage budgets and schedules effectively. Below are selected relevant projects and contacts for references.

South Fork Road Access Improvement*Location:* Rock Creek Ranch, Del Norte County, California*Start and end dates:* August-November 2018

Stillwater Sciences supported the Smith River Alliance (SRA) in upgrading their access road at Rock Creek Ranch on the South Fork Smith River in order to meet County regulations. The evaluation focused on characterizing the existing road alignment and site topography, assessing opportunities and constraints, and identifying potential new alignment options that met Del Norte County's Title 19 Fire Safe Regulations.

Reference #1:

Grant Werschull,
Executive Director,
Smith River Alliance,
916-715-9898,
grant@smithriveralliance.org

Specific tasks included: 1) conducting an engineering-geologic site evaluation, 2) a topographic survey of existing conditions, 3) developing conceptual to 100% engineered designs and cost estimate for constructing a new road alignment, and 4) providing ongoing technical assistance to SRA during the County permitting and implementation phases.

Del Norte County permitting and construction activities included placing and compacting bulk fill and road base rock which was completed in the fall of 2018. Final road surface treatments including paving will occur in the spring of 2019.

Site Evaluation and Grading Plan Development for Honeydew Ranch

Client: Honeydew Ranch, LLC

Location: Honeydew, CA

Start and end dates: 2018-ongoing

Stillwater Sciences performed a site evaluation and biological resources assessment across the 46.5-acre Honeydew Ranch property, a proposed site for agricultural expansion, requiring the development of buildings and water storage pond for irrigation use. Site evaluation work included a topographic survey, geology/soils evaluation, vegetation assessment, wetlands and waters delineation, and special-status fish/wildlife evaluations.

Reference #2:

Lesley Doyle, Manager,
Honeydew Ranch LLC,
707-683-6686,
Hsom16@hotmail.com

Based on the results from the site evaluation, a Wetland Delineation Report was prepared defining wetland areas and required setbacks, a Biological Resource Technical Report was prepared describing potential impacts to biological resources and recommending mitigation/minimization measures, and an Engineering Geologic Soils Report was prepared describing physical site constraints and potential hazards.

Based on information presented in these reports, Stillwater Sciences developed a Site Plan and Grading Plans for the property that included a new 3-million-gallon rainwater catchment pond, access roads, parking areas, and agricultural building pads. The proposed site layout is designed to minimize impacts to biological resources and avoid geologic hazards. The project is currently under CEQA review and Stillwater Sciences' site evaluation and subsequent reporting is providing the basis for the CEQA evaluation. It is expected that CEQA and other permits will be approved in early 2019 clearing the way for construction of the proposed site development to begin in the spring of 2019.

Coastal Resources Assessment Arcata Sawmill Demolition Project

Client: Sierra Pacific Industries

Location: Arcata Sawmill, Arcata, Humboldt County, California

Start and end dates: March-December 2016

Sierra Pacific Industries (SPI) closed their Arcata sawmill in 2016 and proposed to demolish all the existing buildings and facilities in preparation for repurposing or selling the property. Due to the sawmill's location within the California Coastal Commission's (CCC) jurisdiction along the shores of Humboldt Bay, Stillwater developed a Coastal Resource Assessment and Coastal Development Permit, as required by the CCC for demolition.

Reference #3:

Tony Jaegel, Director of
Environmental Affairs,
Sierra Pacific Industries,
530-378-8179,
tjaegel@spi-ind.com

For the development of the Coastal Resource Assessment, Stillwater Sciences conducted a site evaluation of the SPI property to assess presence of habitat that may support special-status wildlife or plant species, jurisdictional wetlands, and special-status vegetation communities that

may be considered Environmentally Sensitive Habitat Areas by the CCC. The Coastal Resources Assessment documented the results of the site visit, evaluated the project's potential impacts on these coastal resources, identified the significance of these potential impacts, and incorporated proposed measures to avoid, minimize, and mitigate potential impacts that were determined to be significant as defined by both the California Coastal Act and the California Environmental Quality Act (CEQA).

The Coastal Development Permit process is, by statute, functionally equivalent to the environmental review process required under CEQA. The Coastal Resources Assessment was developed so that the project would not require a separate CEQA analysis and significance determination document (e.g., a negative declaration). The Coastal Resource Assessment was submitted to the CCC as a required attachment to the Coastal Development Permit application.

Siting Study, Biological Constraints Analysis and PEA Support for the Vierra Reinforcement Project

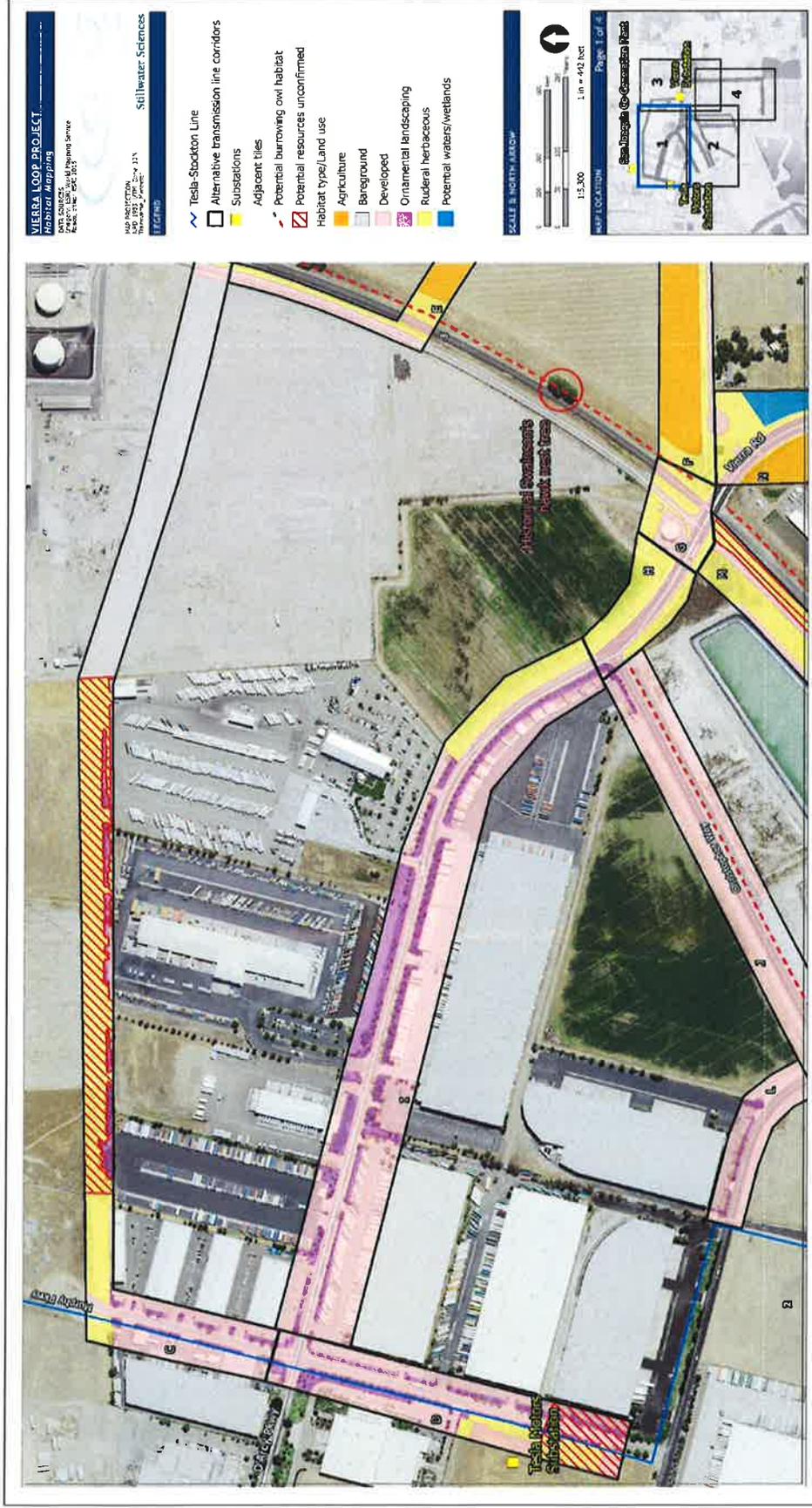
Client: Pacific Gas & Electric Company, as a subconsultant to TRC

Location: Vierra Substation, City of Lathrop, San Joaquin County, CA

Start and end dates: 2017-2018

Stillwater Sciences supported a project proposing to expand PG&E's existing Vierra Substation and build a new, double-circuit power line west from the substation approximate one mile to the existing Tesla-Stockton Cogen Junction 115 kilovolt (kV) Power Line. The project is in a commercially developed area near Lathrop and Manteca, California. Stillwater conducted spatial analyses and produced a suite of maps (see example below) to support a Biological Constraints Analysis as part of the siting and routing.

Twelve corridors were initially identified as potential locations for the new power line. Stillwater conducted a preliminary desktop information review in GIS using potential corridor location data to identify sensitive botanical, wildlife, and hydrological resources that may have been impacted by the project. Stillwater then verified GIS analyses with reconnaissance-level field surveys. Based on the results of the field surveys, Stillwater prepared site maps showing habitat types and resources with the potential to be impacted. The report included an assessment of potential project constraints, recommendations for project routes, and proposed avoidance and minimization and/or mitigation measures for potential project impacts on sensitive resources. Stillwater's biologists then prepared the biological resources PEA chapter and developed the formal Applicant Proposed Measures (APMs) necessary to avoid, minimize, or mitigate potentially significant impacts on biological resources.



Sample work product to support a Biological Constraints Analysis as part of the siting and routing for the Vierra Reinforcement Project.

Section 4: Approach

We understand this project has a well-defined timeline and our staff are ready and available to start work as soon as contracting is completed. If desirable to the Authority, we are able to advance the project timeline for *Deliverables A, B1, B2, and B3* by one month, respectively. We do not know if the presentation to the Authority Board of Commissioners (*Deliverable B4*) is a “set date”, but we are flexible and willing to modify the project timeline, if desired.

Task A: First Tier Assessment & Mapping

Stillwater staff will prepare a draft map and list of properties within the defined project area meeting the first-tier assessment criteria prior to the kickoff meeting with the Authority Director to facilitate a more productive discussion and selection of potential properties. Following the kickoff meeting Stillwater’s project manager will conduct a reconnaissance field review of potential properties to develop the list and map for *Deliverable A*.

Task B: Second Tier Assessment & Recommended Alternatives

For each of the potential properties, Stillwater will conduct pre-field desktop review of pertinent data sources and reports including project area topography (NOAA Coastal LiDAR and USGS 7.5’ quadrangle maps), geologic and landslide maps and reports, groundwater well completion reports, Natural Resources Conservation Service (NRCS) soils information (e.g., soils map, report, and official descriptions), U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) maps and descriptions, public utility GIS data, and local real estate listings to support second-tier assessment evaluation. Following desktop review, Stillwater’s project manager/geologist and coastal ecologist will conduct onsite evaluations at each property where access is permitted. If access to a particular property is not permitted but the site is potentially highly suitable, Stillwater can conduct all desktop and remote sensing assessments and field verification from public roads and/or adjacent properties. Concurrently, Stillwater’s project manager will communicate with landowners and stakeholders in the project area, and realtors, as needed, to determine willingness to sell and estimated market value of potential properties.

Following desktop and field assessments, Stillwater will tabulate and map two to four properties most favorably meeting the second-tier criteria as described under *Deliverable B1*. Stillwater will then draft the Initial Site Assessment Report (*Deliverable B2*) that includes a narrative summarizing the comparison of properties under the first and second-tier assessments, as well as discussion of potential opportunities and constraints of each of the two-to four properties recommended for further analysis. This discussion will be based on geologic, ecologic, and engineering feasibility considerations at each property. Stillwater’s project manager will meet with the Authority Director to present and discuss Deliverables B1 and B2, and to discuss other pertinent information such as property ownership, asking price, and estimated market value of each property. Based on Authority staff’s written comments on Deliverables B1 and B2, Stillwater will prepare the Final Northern Transfer Station Site Assessment Report (*Deliverable B3*), which will include a separate map for each property recommended for further assessment. Stillwater’s project manager will attend the Authority Board of Commissioners July 2019 meeting (*Deliverable B4*) to answer questions regarding the assessment, as needed.

Task C: Assistance Negotiating Multiple Rights of First Refusal

Stillwater will assist Authority staff and legal counsel in negotiating and purchasing Rights of First Refusal to Purchase for properties designated by the Authority Board. Stillwater's project manager will be the point of contact for the Authority, however, the full Stillwater project team will be available to review and comment regarding related documents and consult with Authority staff and legal counsel. Work under this task constitutes *Deliverable C*.

Task D: Assistance Developing Design & Engineering Request for Proposals

Stillwater will assist Authority staff in developing a request for proposals (RFP) to select an engineering firm to develop conceptual to 100% designs and specifications, all necessary permitting, and a construction quality assurance plan. Comparable to Task C, Stillwater's project manager will be the point of contact for the Authority, however, our project engineer will serve the primary role in evaluating and assisting Authority staff to develop the RFP. Our coastal ecologist will advise regarding potential additional tasks to the RFP related to developing a mitigation implementation, monitoring, and reporting program. Work under this task constitutes *Deliverable D1*.

Stillwater plans to propose to do the engineering design and implementation oversight phases of the project also. Assuming we are selected to do the site identification, assessment, and environmental review components, we would be in a strategic position to continue with the design and oversight phases of the project. Our familiarity with the specific physical and biological opportunities and constraints at the selected properties and an established working relationship with the Authority from the initial phases of work would provide overall project continuity and cost-savings.

Task D2:

Stillwater will propose an amendment to the Contractor's Service Agreement to complete the checklist and associated draft and final environmental analysis documents necessary to comply with CEQA and CCA (if needed).

Appendix A

Key Officers Resumes

Dylan Caldwell (*M.S., Geology*) is a geomorphologist with expertise in fluvial and hillslope geomorphology, Quaternary geology, hydrology, engineering and restoration geology, geologic and seismic hazards, slope stability, sediment production and storage, erosion prevention, field implementation of technical equipment, and the countless ways these disciplines interface with aquatic, riparian, and upland ecosystems. His experience comes from over a decade of research and consulting work throughout California and Oregon. Dylan manages and works as a lead staff on a variety of projects including site suitability assessments, engineering geologic soils investigations, topographic surveys, aquatic and riparian habitat restoration, engineering design, and environmental analysis and permitting. Mr. Caldwell is a licensed Professional Geologist in California and Oregon.

AREAS OF EXPERTISE

- Fluvial and hillslope geomorphology
- Engineering geologic soils investigation
- Watershed sediment production, transport, and storage
- Topographic and bathymetric surveying
- Erosion prevention and sediment control
- Slope stability assessment and monitoring

YEARS OF EXPERIENCE

At Stillwater: 5 years
In Total: 10 years

LICENSURE AND EDUCATION

Licensed Professional Geologist
California (#9336)
Oregon (#G2523)

M.S., Geology, Humboldt State University, 2012

B.S., Geology, University of California, Davis, 2007

PROFESSIONAL AFFILIATIONS

- American Geophysical Union
- Geological Society of America

RELATED EXPERIENCE

- Lecturer, Dept. of Geology, Humboldt State Univ., Arcata, CA (2014-2016)
- Associate Professor, Dept. of Geology, College of the Redwoods, Crescent City, CA (2014-2015)

SELECTED PROJECT EXPERIENCE

Hall Way Geotechnical Site Assessment, Brookings, OR* (*Client: private site developer*): Mr. Caldwell conducted a geomorphic and geotechnical site assessment focused on site suitability for a multi-unit residential development including multiple structures, a road, and utilities. Specific tasks included soils investigation, topographic survey, quantitative slope stability analysis, geologic hazards assessment, and evaluating potential setbacks from an adjacent stream-riparian corridor.

Del Norte Food Forest Site Assessment, Crescent City, CA (*Clients: Del Norte Food Council and Tolowa Dee-ni' Nation*): Mr. Caldwell conducted a geomorphic site assessment focused on soils properties, stormwater drainage, and overall site suitability for a sustainable agroforestry food forest site. Technical tasks included soils investigation, topographic survey using total station and unmanned aerial system (UAS), and topographic analysis evaluating stormwater runoff.

HWY 197/199 Safe STAA Access, Del Norte County, CA* (*Client: Friends of Del Norte*): Mr. Caldwell supported an independent review of proposed geotechnical work for highway expansion to determine likelihood/ potential impacts of induced slope failures and sediment production to critical salmonid habitat along the Smith River. The study involved analyzing hillslope conditions at multiple riverside highway sites to evaluate slope stability hazards and fine sediment production potential.

Lower Klamath Project Dam Removal, Klamath River, CA and OR (*Client: California State Water Resources Control Board*): As part of Stillwater Sciences' role as the primary CEQA Environmental Impact Report preparer, Mr. Caldwell is the resource lead analyzing potential impacts to flood hydrology, groundwater conditions, water supply, and water rights as they relate to the proposed dam removal project and several alternatives.



- Staff Geologist, Busch Geotechnical Consultants, Brookings, OR (2012-2014)

PRESENTATIONS & PUBLICATIONS

Caldwell, D., I. Pryor, and J. Bartlett. 2017. **Round Butte Dam Forebay Flow Evaluation**. American Fisheries Society, Oregon Chapter 2017 Annual Meeting, Bend, Oregon.

Hemphill-Haley, E., H. Kelsey, C. Loofbourrow, D. Caldwell and N. Graehl. 2015. **Earthquakes, tsunamis, and storms recorded at Crescent City, USA**, American Geophysical Union Annual Meeting, San Francisco, California.

Wilson, R., E. Hemphill-Haley, B. Jaffe, B. Richmond, R. Peters, N. Graehl, H. Kelsey, R. Leeper, S. Watt, M. McGann, D. Hoirup, C. Chague-Goff, J. Goff, D. Caldwell and C. Loofbourrow. 2014. **The search for geologic evidence of distant-source tsunamis using new field data in California**, chap. C of Ross, S.L., and Jones, L.M., eds., *The SAFRR (Science Application for Risk Reduction) tsunami scenario: U.S. Geological Survey Open-File Report 2013-1170-C*, 122 p., <http://dx.doi.org/10.3133/ofr20131170c>.

Caldwell, D. and H. Kelsey. 2011. **Drainage area-dependent knickpoint generation mechanisms, Smith River, northern California**, American Geophysical Union Annual Meeting, San Francisco, California.

Caldwell, D. and H. Kelsey. 2010. **Strath terrace formation and knickpoint migration in a coastal watershed draining to the Cascadia subduction margin, Smith River, northern California**, American Geophysical Union Annual Meeting, San Francisco, California.

Groundwater Monitoring of Decommissioned Solid Waste Disposal Facility, Del Norte County, CA* (*Client: Del Norte Solid Waste Management Authority*): Mr. Caldwell oversaw groundwater monitoring well installation as part of ongoing decommissioning monitoring. Technical tasks included logging borehole stratigraphy and determining appropriate screening intervals to assess and facilitate the monitoring of potential groundwater contamination between aquifers at multiple depths.

Redwood Creek Instream Habitat Enhancement Design, South Fork Eel River, CA (*Client: Eel River Watershed Improvement Group and CDFW*). Mr. Caldwell led the geomorphic assessment and supported topographic field surveys used to develop conceptual design plans and Basis of Design Report for instream aquatic habitat enhancement treatments along mainstem Redwood Creek.

Lagunitas Creek Watershed Road Assessment, Marin County, CA (*Client: Marin County Department of Public Works*): Mr. Caldwell supported development of a sediment assessment protocol and conducted a field-based assessment that determined site-specific sediment production rates at over 400 culvert crossings and 100 road segments along 40 miles of paved road. Field assessments supported engineering recommendations for most sites to reduce sediment runoff from entering adjacent streams.

CDFW Notices of Violation, Humboldt, Mendocino, and Trinity Counties, CA: Mr. Caldwell is working with landowners and their legal representatives across the California north coast to remedy Notices of Violations (NOVs) issued by CDFW. Tasks include site assessments, identifying violation locations, engineering geologic soil investigations, topographic surveying, developing erosion prevention and sediment control plans, culvert sizing for 100-year storms, permit applications, construction monitoring, and landowner and agency communications.

Airport FAA Improvement Project, Crescent City, CA* (*Client: Border Coast Regional Airport Authority & URS Corp.*): Mr. Caldwell supported a geotechnical investigation for a multi-stage infrastructure development project (i.e. road, runway, aircraft apron, terminal). Technical tasks included analyzing site stratigraphy, engineering geologic soils properties, and geologic/seismic hazards.

Macklyn Creek Interim Protection Measures, Brookings, OR* (*Client: City of Brookings, Oregon*): Mr. Caldwell conducted a geomorphic assessment and mitigation design for a semi-urban migrating stream. The study involved designing channel bank stabilization measures by evaluating channel morphology, hydrologic and hydraulic modeling, and conceptual large wood designs.

* Denotes project completed prior to joining Stillwater Sciences.

Karley Rodriguez (B.A., *Environmental Studies*) specializes in Geographic Information Systems (GIS) analysis, geographic visualization and cartography, and data management, as well as graphic design. She works inter-disciplinarily with Stillwater's scientists to perform GIS and data analyses; produce maps and figures; and assist with field efforts. In her work, she is capable of vertically integrating many steps in the process from initial data creation and analysis, to the final production of deliverable products.

AREAS OF EXPERTISE

- GIS
- Cartography
- Data management and visualization
- Graphic design
- Vegetation mapping

YEARS OF EXPERIENCE

At Stillwater: 7 years
In Total: 8 years

EDUCATION

B.A., *Environmental Studies*, University of California, Santa Cruz, 2011

TRAINING

Field and Office Satellite GPS Training Workshop (September 2012)
Cartographic Design (November 2012)
Jepson Herbarium Field Botany Workshop (March 2014)
Fluvial Geomorphology (May 2014)
Geomorphic & Ecological Fundamentals of River Restoration (August 2017)

SELECTED PROJECT EXPERIENCE

GIS Lead, Site Assessment, Biological Constraints Analysis and PEA support for the Vierra Reinforcement Project, San Joaquin County, CA (*Client: Pacific Gas and Electric Company [PG&E]*): Stillwater Sciences supported a project proposing to expand PG&E's existing Vierra Substation and build a new, double-circuit power line. Stillwater Sciences prepared a Biological Constraints Analysis as part of the siting, routing, and constraints analysis for the project. Following the siting study, Stillwater conducted targeted surveys and prepared the biological resource sections of the project's Proponent's Environmental Assessment (PEA). Ms. Rodriguez was the GIS lead, responsible for maintaining GIS data for the siting, routing, and constraints analysis for the project, including queries of rare plant and animal databases, and the National Wetlands Inventory database. She prepared field maps, performed analysis on data collected in the field, and produced report figures showing results.

GIS Lead, Site Assessment for Niles Canyon Quarry Reclamation Plan, Alameda County, CA (*Client: Benchmark Resources*): As the Quarry undergoes reclamation, Stillwater Sciences was contracted to conduct a peer review of existing drainage and hydrological analyses of the seasonal creek present at the site, conduct a site assessment related to reclamation of the Quarry, develop a conceptual design to restore natural channel functions, develop a revegetation and landscape plan to restore botanical communities, and provide permitting support to ensure federal, state and local regulatory compliance. Ms. Rodriguez provided GIS support for the development of vegetation and habitat maps as well as assisted with topographic surveys and UAV flights to produce fieldmaps and report figures. In addition, she provided desktop queries of rare plants and animals.

GIS Lead, Humboldt 60-kv Transmission Line Reconductoring Project, Humboldt County, CA (*Client: PG&E*): PG&E is planning to reductor approximately 8.4 miles of the Humboldt Bay-Humboldt No. 1 60-kV Transmission Line. Stillwater led a biological constraints analysis to identify the primary biological and wetland resources that could be potentially affected by Project implementation, thereby



assisting PG&E in its project planning process. Ms. Rodriguez provided GIS support for the Biological Resources Technical Paper and wetland delineation, map production, data management, vegetation mapping and wetland delineation.

GIS Lead, Potter Valley Hydroelectric Project Relicensing, Lake and Mendocino Counties, CA (*Client: PG&E*): Ms. Rodriguez is the GIS lead, responsible for maintaining all spatial data from previous and current studies. She supports field and report map creation, and performs spatial analysis for studies in fisheries, special-status plants, riparian vegetation, and water quality. She provides tablet support for spatial and tabular data collection in the field, participates in riparian studies fieldwork, and created a vegetation map for the 50,000-acre project area.

GIS Lead, Guadalupe River Mitigation Monitoring (*Client: Santa Clara Valley Water District*): Ms. Rodriguez is the GIS lead in support of Stillwater Sciences' mitigation monitoring work on the Guadalupe River and Creek. Her responsibilities include preparation of electronic data collection materials and maps for field surveys. She manages the data processing and analysis of spatial data, as well as the generation of report figures. She supports field crews with vegetation and geomorphic monitoring surveys.

GIS and Graphic Support, Lower Klamath Dam Removal Project, Klamath River, CA and OR (*Client: California State Water Resources Control Board*): Ms. Rodriguez is the GIS lead in support of Stillwater Sciences' role as the primary CEQA Environmental Impact Report preparer. She manages relevant GIS data, performs spatial analysis for all resource leads, and creates figures and graphics.

GIS Support, Santa Clara River Estuary Special Studies, Santa Clara River, CA (*Client: City of Ventura*): Ms. Rodriguez performs GIS analysis to support in the assessment of the ecological impact of wastewater discharge into the Santa Clara River Estuary. She mapped habitat types for both historical and current vegetation conditions and predicted the effects of various wastewater discharge scenarios on vegetation communities, wetlands, and potential special-status plants.

GIS Support, Winter Island Tidal Habitat Restoration, San Francisco Bay-Delta, CA (*Client: Department of Water Resources [DWR]*): Ms. Rodriguez performs the GIS data management and analysis for the restoration of Winter Island, including a wetland delineation and vegetation mapping. She supports decision making for the development and screening of restoration alternatives and regulatory approaches.

Emily Teraoka (*M.S., Natural Resources*) is an ecologist with extensive experience in mitigation and restoration site design and monitoring, integrating physical and biological processes and conditions, and analyzing environmental impacts for regulatory purposes. She has worked on numerous permitting and regulatory compliance projects in the Humboldt Bay area and is an approved biologist for the California Coastal Commission, California Energy Commission, and California Department of Fish and Wildlife for Pacific Gas & Electric's Humboldt Bay Power Plant. Her technical expertise includes riparian and wetland plant ecology, vegetation mapping and rare plant surveys, vegetation monitoring design and implementation, U.S. Army Corps of Engineers jurisdictional wetland delineation, and planning and permitting within the California Coastal Zone.

AREAS OF EXPERTISE

- Vegetation mapping
- Special-status plant surveys
- Wetland Delineation
- Wetland and Estuary Restoration
- Coastal Development Permitting
- Biological Permitting Support
- Vegetation Management and Monitoring
- NEPA and CEQA Analysis
- Restoration Design Planning
- Aquatic and Riparian Ecology
- Geographic Information System (GIS) map design
- Construction Monitoring

YEARS OF EXPERIENCE

At Stillwater: 16 years
In Total: 18 years

EDUCATION

M.S., Natural Resources, concentration in Forestry and Wildland Resources, Humboldt State University, 2010

B.A., Biology and Environmental Studies, Williams College, 1999

PERMITS

CDFW Plant Voucher Collecting Permit (Permit 2081 (a)-13-134-V)

California Rapid Assessment Methodology (CRAM) Certified Practitioner (May 2013)

SELECTED PROJECT EXPERIENCE

Botanical Survey/Vegetation Mapping/Wetland Delineation, Sierra Pacific Industries Arcata Division Sawmill Demolition Project, Arcata, CA (*Client: Sierra Pacific Industries*): Ms. Teraoka conducted botanical, vegetation mapping, and wetland delineation surveys at the Arcata Division Sawmill and developed a Coastal Resource Assessment in support of the California Coastal Commission's (CCC) Coastal Development Permit (CDP).

Final Site Restoration Design, Planning, and Environmental Permitting, Humboldt Bay Power Plant, King Salmon, CA (*Client: Pacific Gas & Electric Company [PG&E]*): Ms. Teraoka led the development of a Final Site Restoration (FSR) design for the 43-acre Humboldt Bay Power Plant (HBPP). Ms. Teraoka was a key member of a team to permit the FSR plan which involved extensive negotiations with the California Coastal Commission on restoration and mitigation requirements. Ms. Teraoka developed a Biological Mitigation and Monitoring Plan for the Project that integrated the restoration and mitigation requirements from seven different projects and existing permits from multiple agencies such as the CCC, California Energy Commission (CEC), U.S. Army Corps of Engineers, Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). She also developed an Eelgrass Mitigation and Monitoring Plan and Conceptual Fencing Plan that incorporated wildlife friendly fencing around all restored areas with the requirements of Humboldt Bay Generating Station continuing operations and PG&E security standards and protocols.

Manila Bike Trail Project, Manila, CA (*Client: Humboldt County*): Ms. Teraoka conducted a botanical survey and a wetland delineation to determine the presence any special-status plants or wetlands that may be affected by creation of a multi-use bike trail along Samoa Avenue in Manila, CA on the Samoa Peninsula.

SELECTED PUBLICATIONS

Teraoka, E., L. McClure, E. Craydon. 2016. **Eelgrass restoration in Humboldt Bay. Results from five years of monitoring.** Poster presented at the Humboldt Bay 2016 Symposium.

Keyes, C. and E. Teraoka. **Structure and Composition of Old-Growth and Unmanaged Second-Growth Riparian Forests at Redwood National Park, USA.** *Forests*. 2014; 5(2):256-268.

Teraoka, E. and E. Craydon. 2013. **Eelgrass restoration in Humboldt Bay, CA: restoration techniques and results from two years of monitoring.** Poster presentation at NCB Symposium.

Craydon, E., E. Teraoka, and V. Dains. 2013. **Monitoring restored wetlands at the Buhne Point Wetlands Preserve, Humboldt County, CA.** Poster presentation at NCB Symposium.

TRAINING

- Wetland Delineation Training Course, Wetland Training Institute. (April 2014).
- Wilderness First Aid (April 2017)
- Stillwater Sciences CPR and Baseline Health & Safety Training (April 2018)
- Pacific Gas and Electric Company Hydro Generation Site Orientation Training (various projects). (August 2018)
- Pacific Gas and Electric Company Humboldt Bay Power Plant General Employee Training (GET). (May 2014–2018)
- NEPA: Writing the Perfect FONSI/EA or EIS (January 2009)
- Fundamentals of the California Environmental Quality Act (CEQA) (January 2008)

Permitting and Mitigation Support, Wetland Delineation, Botanical Surveys, Arcata Reconductoring Project, Arcata, CA (Client: PG&E): Ms. Teraoka delineated the preliminary boundaries of USACE- and CCC- wetlands and waters and conducted protocol-level special-status plant surveys along the five-mile long transmission line. Ms. Teraoka assisted PG&E with various permitting requirements including a CDPs for both Humboldt County and the City of Arcata, USACE Section 404, RWQCB Section 401 certification, and a Mitigated Negative Declaration for CEQA compliance for the project. She helped the client locate suitable wetland mitigation for this project, designed, permitted, and implemented the mitigation and conducted 3 years of required monitoring documenting successful wetland creation.

Vegetation Surveys and Environmental Analysis, WaveConnect Project, CA (Client: PG&E): Ms. Teraoka was the vegetation and wetlands technical lead to assess potential impacts on sensitive plants and habitats for this pilot wave energy project. She was part of a permitting team that participated in numerous agency and public meetings identifying regulatory constraints and stakeholder concerns.

Botanical Surveys and Wetland Delineations, Humboldt County, CA (Client: PG&E): Ms. Teraoka has conducted numerous special-status plant surveys and wetland delineations for PG&E throughout Humboldt County. These projects include the Ryan Slough Pipeline Replacement Project, Maple Creek Substation Expansion, Ryan Creek Erosion Control Project, King Salmon Avenue Expansion Project, Humboldt Bay Power Plant Decommissioning, WaveConnect (Samoa Peninsula), Arcata Regulating Station, Humboldt Substation, and Newburg Substation Improvement. Habitats surveyed include coastal dunes, coastal scrub, coastal grasslands, salt marsh, brackish and freshwater wetlands, tidal sloughs, former tidelands, riparian forest, mixed hardwood and coniferous forests.

Environmental Permitting, Mitigation Design, Eelgrass Survey, Fisherman's Channel, King Salmon, CA (Client: PG&E): Ms. Teraoka was the botanical technical lead providing biological support for the permitting of a dredging project. The project involved the development of a biological assessment and biological resources evaluation to support NEPA and CEQA, eelgrass and longfin smelt mitigation design, a mitigation and monitoring plan, and close consultation with local, state, and federal agencies. Ms. Teraoka also led a survey to identify eelgrass (*Zostera marina*) distribution and density in affected channels where it may be impacted by dredging in support of the project Coastal Development Permit (CDP) and CDFW Incidental Take Permit. Ms. Teraoka developed field methods using underwater video to survey eelgrass in the deeper navigational channels where traditional survey methods (e.g., SCUBA diving) were unsafe.

Joel Monschke (*M.S., Geotechnical Engineering*) is a California licensed Civil Engineer with expertise in restoration engineering, hydrology and hydraulics, engineering geology, geotechnical engineering, and geomorphology. Mr. Monschke has directed and developed projects that upgrade public access infrastructure and enhance fisheries and aquatic habitat, including fish passage. He has focused on the planning, design and implementation of complex projects, including flood control, fish habitat and riparian restoration, hydrologic planning, groundwater recharge, landslide stabilization, and restoration effectiveness analyses.

AREAS OF EXPERTISE

- Restoration Planning, Design and Implementation
- Watershed and Channel Assessment
- Hydrologic and Hydraulic Modeling
- Geotechnical Engineering
- Geology/Hydrogeology

YEARS OF EXPERIENCE

With Stillwater: 4 years
In Total: 16 years

CERTIFICATION /EDUCATION

Licensed Civil Engineer,
California (#C79688)
Arizona (#59454)
Oregon (#89863PE)

Qualified SWPPP Developer
(QSD), California

M.S., Geotechnical Engineering,
University of California,
Berkeley, 2002

*B.S., Engineering Geology and
Hydrogeology,* Stanford
University, California, 2000

PUBLICATION

Cui, Y., D. B. Booth, J.
Monschke, S. Gentzler, J.
Rodifer, B. Greimann, and B.
Cluer. 2016. *Analyses of the*

SELECTED PROJECT EXPERIENCE

Site Evaluation and Grading Plan Development for Honeydew Ranch, Honeydew, CA (*Client: Honeydew Ranch LLC*): Mr. Monschke oversaw a site evaluation on this 46.5-acre parcel that included a biological resource assessment, wetlands and waters delineation, topographic survey and geology/soils assessment. Based on the results of the site evaluation, a Site Plan, Grading Plans, and Soils Report were prepared that include a 3-million-gallon rainwater catchment pond, access roads, parking areas, and agricultural building pads. Mr. Monschke also provided support during the CEQA review process. Implementation of the project is scheduled for the spring/summer of 2018.

Breuner Marsh Restoration and Public Access Plan, Richmond, CA* (*Client: East Bay Regional Parks District*): Mr. Monschke prepared design plans for the restoration of a historic landfill covering 80 acres along the San Pablo Bay. The project included construction of approximately 2 miles of new San Francisco Bay Trail. Due to the site's proximity to the bay, stormwater management was a key design component. Mr. Monschke developed 100% design plans, specifications, and cost estimates for the project, which included a complex series of bioswales and wetlands designed to treat runoff from the trail and visitor facilities. In addition, he prepared an erosion control plan, a Stormwater Pollution Prevention Plan (SWPPP), as well as trail, bridge, boardwalk and parking facility layouts. He worked on the geotechnical investigations and reports for the bridge and boardwalk footings and performed hydraulic analysis to determine flooding potential for the public facilities and inundation analyses for the tidal and seasonal wetlands. 100% design plans were completed in February 2014 and construction is currently underway on the ~\$8 million project.

Prospect Island Aquatic Habitat Restoration Project, Solano County, CA (*Client: Department of Water Resources*): Mr. Monschke developed proposed-conditions grading surfaces and cross sections in AutoCAD Civil3D for the Prospect Island project which includes restoration of 1,600 acres of tidal marsh in the Cache Slough Complex. The overall project includes over 400,000 cubic yards of cut and fill including existing slough channel dredging, levee breaches, and construction of new slough channels and intertidal benches. The new grading surfaces will provide the basis for development of construction drawings.

erosion of fine sediment deposit for a large dam-removal project: an empirical approach. International Journal of River Basin Management DOI: 10.1080/15715124.2016.1247362.

CONFERENCE PRESENTATIONS

Monschke, J. 2016. **Reconnecting Hillslope Hydrology through Management of Road Runoff,** Salmonid Restoration Federation Conference, Fortuna, CA.

Monschke, J. 2015. **Strategies for Enhancing Dry Season Flows in North Coastal California,** Salmonid Restoration Federation Conference, Santa Rosa, CA.

Monschke, J., Stallman, J., Strange, J. 2015. **Planning for Large-Scale Floodplain Habitat Restoration in the Salmon River,** Salmonid Restoration Federation Conference, Santa Rosa, CA.

Monschke, J. 2014. **Linking Erosion Control to Climate Change Adaptation and Mitigation through Holistic Land-use Planning,** International Erosion Control Association Latin American Conference, Antigua, Guatemala.

Monschke, J. 2013. **Addressing Soil Erosion at the Watershed Scale,** International Soil Conservation Organization Conference, Medellin, Colombia.

Buck Gulch (South Fork Eel River) Fish Passage Design, Briceland, CA (Client: *Eel River Watershed Improvement Group, CDFW and Private Landowner*). Mr. Monschke oversaw a topographic survey, hydraulic modeling and development of development of 65% engineering designs for a culvert to pipe arch upgrade. California Department of Fish and wildlife Lake and Streambed Alteration Agreement was secured for project work.

Timber Cove Trail Feasibility Study, Sonoma County, CA* (Client: *Sonoma County Regional Parks District*): Mr. Monschke performed a feasibility study for a proposed public access trail along Highway 1 in Sonoma County. Worked with field survey and LIDAR data to identify right-of-way and engineering constraints for different trail types and alignments.

Albany Beach Restoration and Public Access Project, Albany, CA* (Client: *East Bay Regional Parks District*): Mr. Monschke prepared permit applications for US Army Corps of Engineers and Regional Water Quality Control Board (404 and 401 permits). Assisted with the design of erosion control and drainage features.

Redwood Creek (South Fork Eel River) Instream Habitat Enhancement Design, Briceland, CA (Client: *Eel River Watershed Improvement Group and CDFW*): Mr. Monschke coordinated and reviewed topographic field survey data, a geomorphic assessment, and hydraulic modeling. Collaborating with other Stillwater staff, he developed conceptual to 100% design plans and Basis of Design Report for instream aquatic habitat enhancement treatments along mainstem Redwood Creek near the town of Briceland. Implementation funding was secured and construction is scheduled for 2019.

French Creek Transmission Tower Erosion Analysis, Snohomish County, WA (Client: *Seattle City Light*): Mr. Monschke performed a field assessment, developed geomorphic analyses, and designed a conceptual restoration plan for remediation along an active bank erosion scarp threatening two trunk-line electrical transmission towers. Tasks involved a field survey with a total station, integration of LiDAR and field data, hydraulic modeling with HEC-RAS, and design of 400 linear feet of bioengineered bank protection and 15,000 cubic yards of grading to stabilize the over-steepened stream bank.

San Geronimo Creek Habitat Enhancement Project, Marin County, CA (Client: *Marin County Department of Public Works*): Mr. Monschke performed a topographic field survey, modeled hydraulics, prepared flood inundation maps, calculated wood stability and developed conceptual to 100% restoration designs and a Basis of Design Report for aquatic habitat enhancement treatments and stormwater BMPs at four sites within the San Geronimo Creek watershed.

* Denotes project completed prior to joining Stillwater Sciences.



Stillwater Sciences

www.stillwatersci.com

Berkeley, CA
Megan Keever
megan@stillwatersci.com
(510) 848-8098x112

Arcata, CA
Dirk Pedersen
dirk@stillwatersci.com
(707) 822-9607x201

Portland, OR
Kim Gould
kgould@stillwatersci.com
(503) 267-9006

Davis, CA
Russ Liebig
russ@stillwatersci.com
(530) 756-7550x223

Morro Bay, CA
Ethan Bell
ethan@stillwatersci.com
(707) 407-6862

Los Angeles, CA
Wendy Katagi
wkatagi@stillwatersci.com
(424) 302-3910

Stillwater Sciences is an employee owned, small, women-owned business of science and engineering consultants.



Original

*Gasquet Transfer
Station*

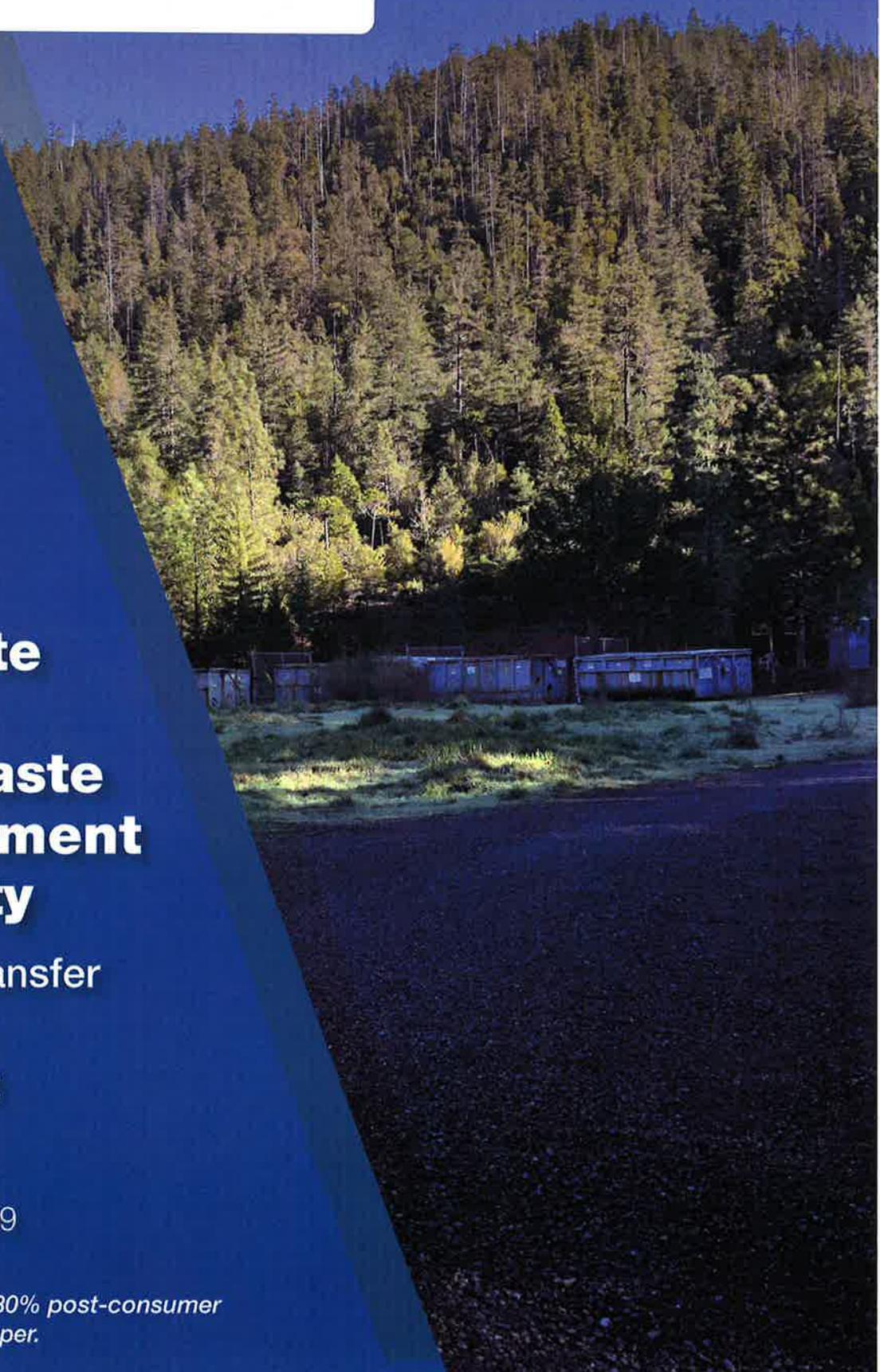
Del Norte County Solid Waste Management Authority

**Northern Transfer
Station Site
Assessment
Proposal**

January 28, 2019



*Printed on 30% post-consumer
recycled paper.*



January 28, 2019

GHD Inc.

718 3rd Street, Eureka, CA 95501
T 707 443 8326 W www.ghd.com

Del Norte Solid Waste Management Authority
1700 State Street
Crescent City, CA 95531
Attn: Tedd Ward, Director

RE: Proposal for Professional Services for Site Identification, Assessment, and Environmental Review for a Small Volume Transfer Station to Serve the communities of Smith River, the Tolowa Dee-ni' Nation, and Fort Dick

Dear Mr. Ward:

For over a decade, GHD has served the County of Del Norte and its constituent agencies, special districts, and communities, acquiring a deep understanding and familiarity with the needs, people, public facilities, and natural resources of the region. We are excited to have the opportunity to assist the Del Norte Solid Waste Management Authority in further serving the communities of Del Norte through these initial stages of what will prove to be a crucial project for the County.

GHD can uniquely assist the Authority in meeting the goals of the proposed scope of work while prioritizing cost-efficiency and value. Our confidence derives from the following direct benefits for the Authority:

- Our Project Manager, Dagan Short, possesses broad transfer station experience—performing siting studies, engineering design and layout, permitting support, and developing operational plans on small- to large-scale transfer stations and material recovery facilities in California, Oregon, Washington, and Alaska—as well as a deep foreknowledge of the Del Norte County region, especially with the Gasquet and Klamath transfer stations, upon which this new transfer station will be based.
- Our environmental work in Del Norte County, led by Misha Schwarz and Ken Mierzwa, has substantially contributed to over \$35 million in economic investment in the region, as well as job growth, preservation of natural resources, agency coordination, and the continued success of commercial opportunities.
- Our familiarity and success with local permitting agencies in the County and Coastal Zone—namely, the California Coastal Commission, Del Norte Community Development Department, U.S. Fish & Wildlife Service, CA Department of Fish & Wildlife, and U.S. Army Corps of Engineers—ensures efficient permitting processes and greater likelihood of schedule-conscious, swift comment and approval periods.
- Our proximity to Del Norte County facilities and ongoing work in the immediate area translates not only to an unmatched responsiveness and cost savings for the Authority, but to a commitment, as consultants who both work and live in the region, to the health and sustainability of the Del Norte community.

GHD will provide the Authority the expertise and capacity needed to achieve all goals within financially viable means. Thank you for your consideration and we look forward to the possibility of working with you not only on this project, but for many years to come.

Sincerely,
GHD INC.



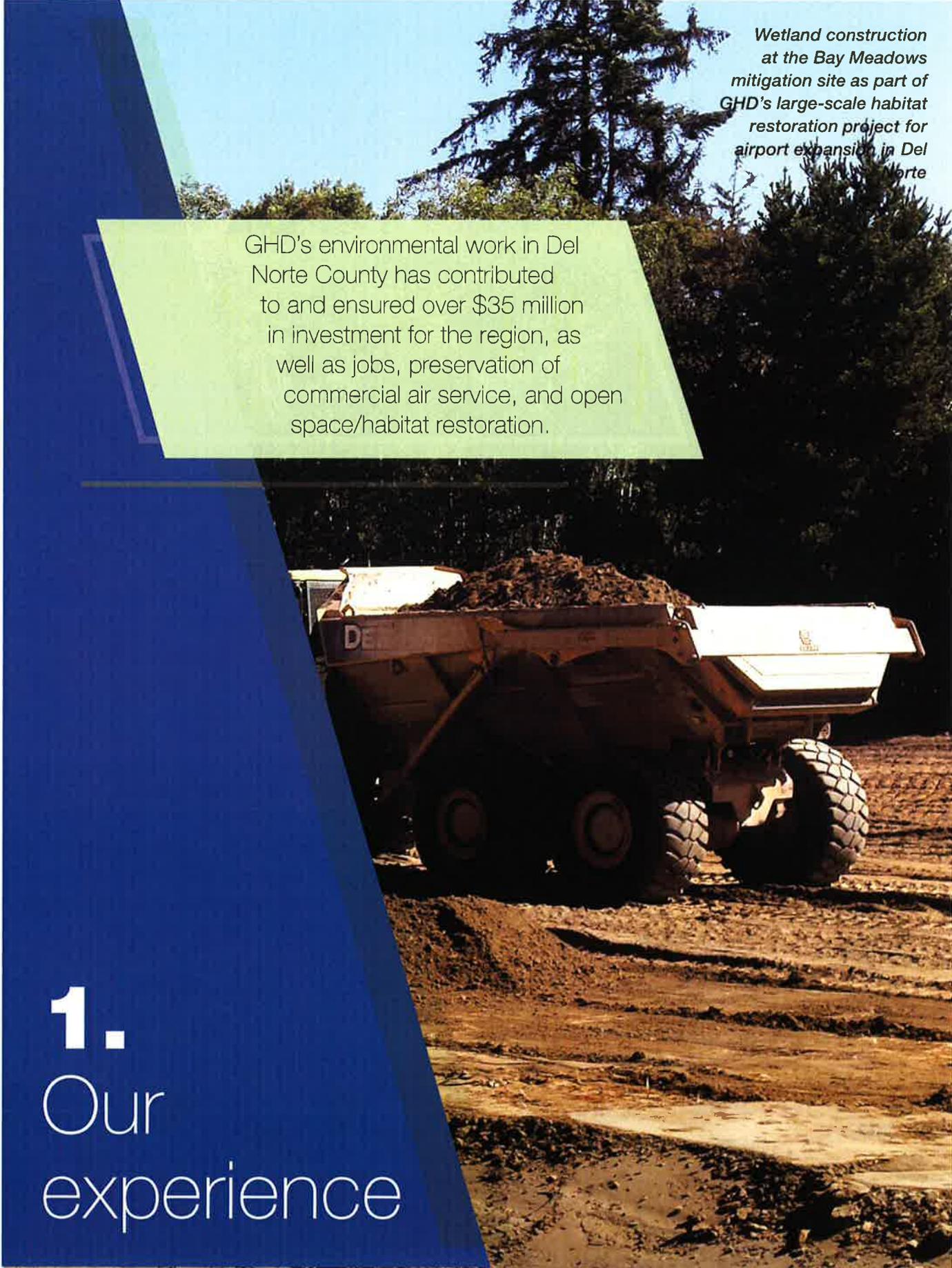
Dagan Short, PE
Project Manager
dagan.short@ghd.com



Steve Allen, PE
Principal-in-Charge
steve.allen@ghd.com

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*Wetland construction
at the Bay Meadows
mitigation site as part of
GHD's large-scale habitat
restoration project for
airport expansion in Del
Norte*

GHD's environmental work in Del Norte County has contributed to and ensured over \$35 million in investment for the region, as well as jobs, preservation of commercial air service, and open space/habitat restoration.

1. Our experience

On-site revegetation after moving the security fence at the Del Norte County Regional Airport



GHD Inc.

GHD is one of the world's leading engineering and environmental consulting companies. Established in 1928, GHD employs more than 8,500 people across five continents and serves clients in the global markets of environment, water, energy and resources, property and buildings, and transportation. Wholly owned by its people, GHD is a global network of engineers, architects, landscape architects, planners, scientists, project managers, and economists collaborating to deliver sustainable outcomes for our clients and the community.

For over 80 years, the professionals at GHD have improved, protected, and enhanced the communities and environment of northern California. We know that to continue to fulfill this commitment, we must earn the role of serving as trusted advisor to our clients, partnering with municipalities, regional entities, federal agencies, commercial enterprises, and local private and public stakeholders to create solutions that will above all serve the public's interests through the projects we help implement. Balancing economic, environmental, operational, and social interests is becoming ever more important as a measure of success, requiring not only a broad range of technical expertise, but a comprehensive understanding of governance and funding processes.

The GHD office in Eureka was founded over 65 years ago. Most of our proposed team (and all leadership personnel) in the following pages are based in GHD's Eureka office,

able to respond quickly and efficiently with no travel cost or associated expenses. Though our qualifications focus on providing local staff to support the Del Norte County Solid Waste Management Authority (Authority), GHD has a global network of professionals with a wide range of experience that can be used as needed to improve the quality of services provided. In some situations, this global presence allows us to provide around-the-clock responsiveness, on the rare occasions that such a response is required.

Our firm has an especially deep history serving clients along the California coast, from permitting agencies to private stakeholders, from tribal entities to federal agencies. In addition to the County of Del Norte, we have served the counties of Humboldt, Lake, and Mendocino; the cities of Trinidad, Rio Dell, Fortuna, Arcata, and Eureka; community service districts in McKinleyville, Smith River, Hiouchi, Crescent City, Humboldt, and Manila; the Wildlands Conservancy; California State Parks; California Department of Fish & Wildlife (CDFW); U.S. Fish & Wildlife Service (USFWS); U.S. Army Corps of Engineers (USACE), National Marine Fisheries Service (NMFS); the National Park Service; California Coastal Conservancy; and multiple resource conservation districts and local tribal entities. The GHD team presented in the following pages is backed by over five decades of experience on the northern California coast. This region is more than our place of work, it is our home, and we see its health and sustainability as points of both pride and priority.



Del Norte County experience

Our team's Planning and Permitting Lead, Misha Schwarz, has previously worked with the Del Norte County Solid Waste Management Authority in the siting study for a proposed transfer station and materials recycling facility, conducting hazardous materials survey for some of the sites, as well as the biological investigations and wetlands delineation. He also assisted in the Environmental Impact Report (EIR), and in obtaining permits. The project site is in the Coastal Zone which required substantial documentation, particularly revolving around impacts to wetlands. Mr. Schwarz also provided assistance at the landfill for permitting and closure.

As described in further detail in Section 3, we have worked with the Border Coast Regional Airport Authority for almost a decade, providing extensive services in habitat restoration, permitting (especially within the complex Coastal Zone), mapping and planning, assessment and evaluation, and extensive agency and stakeholder coordination. This work has involved:

- Del Norte County Regional Airport Terminal Replacement Project, Crescent City, CA
- Del Norte County Regional Airport Runway Safety Area (RSA) Improvements, Crescent City, CA
- Del Norte County Regional Airport Obstruction Removal Project, Crescent City, CA
- Del Norte County Airport Environmental Assessment for Master Plan, Crescent City, CA
- Pacific Shores Subdivision and Bay Meadows RSA Mitigation Projects, Crescent City, CA

- Del Norte County Regional Airport On-Airport and Point Saint George RSA Mitigation Projects, BCRAA, Crescent City, CA

Not only has this work brought together sometimes polarized stakeholders to bring a long-understood difficult project to fruition, it meant substantial regional economic development (preservation of future commercial air service, over \$34 million [US] of investment, construction jobs) and science-based open space preservation and habitat restoration, complimenting and building upon the prior efforts of many important resource agencies.

Notably, GHD's environmental, planning, and engineering work has contributed to the economic vitality of Del Norte. Our Lead Biologist Ken Mierzwa led our biology team for super-fast-track permitting on Netflix's recent, very popular, Sandra-Bullock-starring **Bird Box** filming in Del Norte County. His team turned around a CEQA Mitigated Negative Declaration; 404, 401, and 1602 permits; a Biological Assessment with USFWS and NMFS; and film permits with the County, USFS, NPS, and State Parks in 57 days, including public comment periods. Failure would have meant missing the filming window, a long delay (cast members were contractually committed to other projects immediately after), and no movie currently streaming. This success has contributed to a documented \$1M in direct, local economic benefit to Del Norte County.

As further evidence of our team's deep knowledge of the County, GHD (led by Principal-in-Charge Steve Allen)

worked for the County of Del Norte on the Peacock Creek Fish Passage Project, which was intended to improve fish passage conditions by removing the existing County culvert and replacing it with a 20-foot-wide by 140-foot-long pool and weir fishway, partially covered by a structural steel plate arch. GHD designed the structure to provide upstream passage for juvenile and adult Cutthroat and Steelhead Trout, and Coho and Chinook salmon. The fishway, incorporating a unique vortex weir, was designed to accommodate adult and juvenile salmonid passage over a wide range of flows. The project, located approximately 4,000 feet upstream of the confluence with the Smith River, provides fish access to over 3,500 feet of upstream habitat.

Mr. Allen also led the Cedar Creek Bridge Restoration Project in Del Norte County, which included initial scoping; grant writing; coordination with local watershed groups, California State Parks, and CDFW; topographic surveying; a geomorphic evaluation; hydrologic and hydraulic modeling; design of new crossing; obtaining all necessary permits; preparation of plans and specifications to allow for construction within a limited construction window; construction oversight; and post project monitoring.

Transfer station experience

In addition to Misha Schwarz's previous work with the Del Norte County Solid Waste Authority on work very similar to that proposed for the Northern Transfer Station, GHD has previously led environmental and design services for transfer stations throughout northern California.

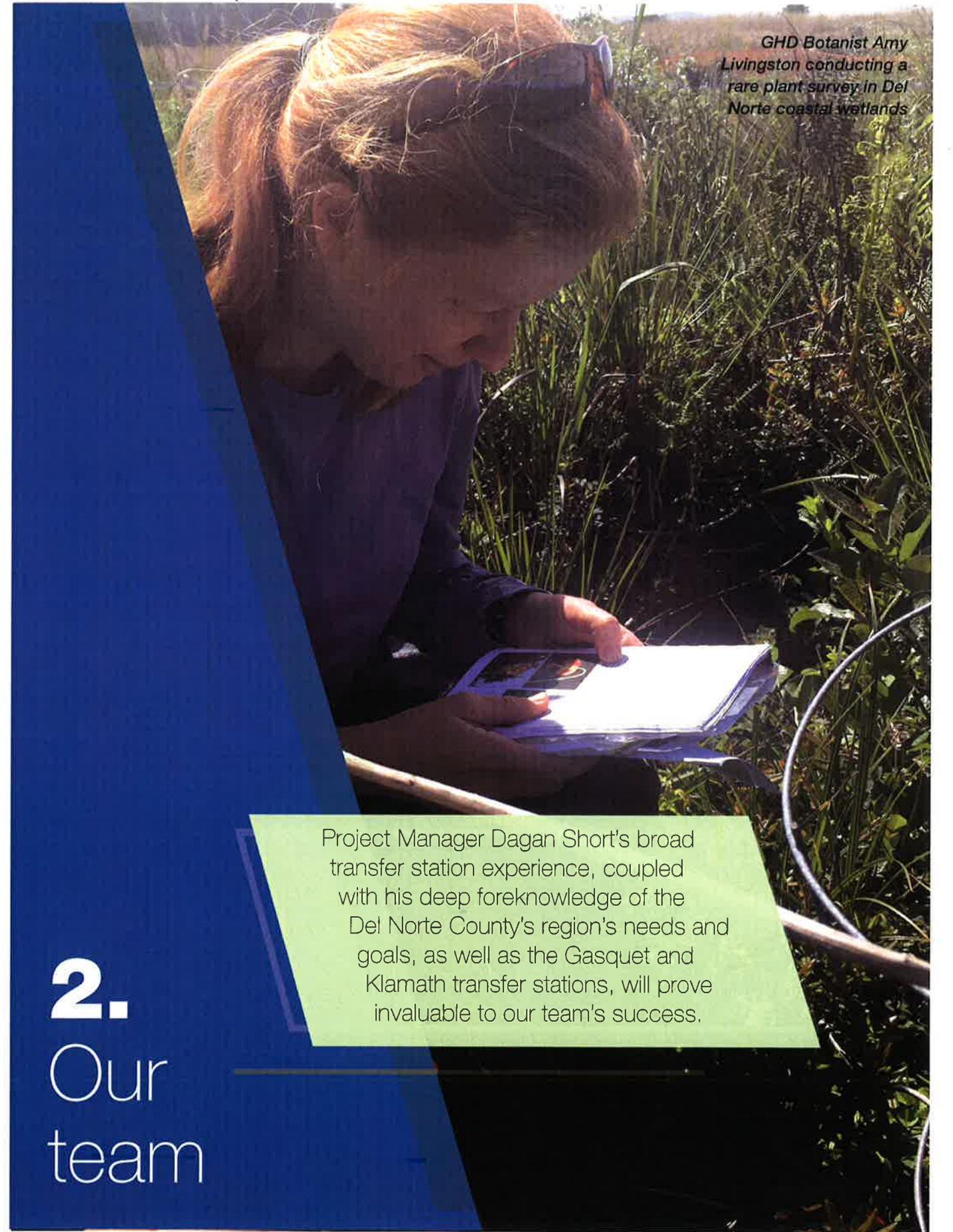
The City of Elk Grove selected GHD to provide engineering design and environmental services for a new municipal solid waste transfer station intended to provide convenient, cost-

effective, and environmentally sound waste management services to the citizens of Elk Grove. The transfer station facility would accept regular trash, recyclable materials, green wastes, household hazardous wastes, and special wastes. GHD provided preliminary site analysis, a Basis of Design Report, conceptual design with LEED design considerations, environmental review assistance (including a preliminary review of environmental constraints and a pre-CEQA analysis), communication with regulatory agencies, and public outreach.

In order to reduce operating costs and expand waste management services, the Mendocino County Board of Supervisors approved a plan proposed by the Mendocino County Solid Waste Division to consolidate the County's waste stream at a single transfer station in the central coast area. GHD conducted a siting study to identify a number of potentially suitable sites for the facility. The study area encompassed an approximately 10-mile-wide strip of land along the coast between the Navarro River and Ten Mile River, comprised of approximately 11,200 individual parcels. Public meetings were held in Fort Bragg to give County residents a chance to participate in the siting process. GHD narrowed the potential sites down to five locations, then recommended additional environmental feasibility studies and complete financial analyses for the top sites prior to negotiating a purchase agreement with property owners. Upon completion of these steps, GHD recommended an EIR.

Similarly, GHD assisted the Mendocino Solid Waste Division with obtaining a CEQA MND and an update to the Coastal Development Permit in order to facilitate improvements to the Caspar Transfer Station. Having completed an Environmentally Sensitive Habitat Area (ESHA) Protection Plan for this client previously, GHD staff were intimately familiar with this project site.





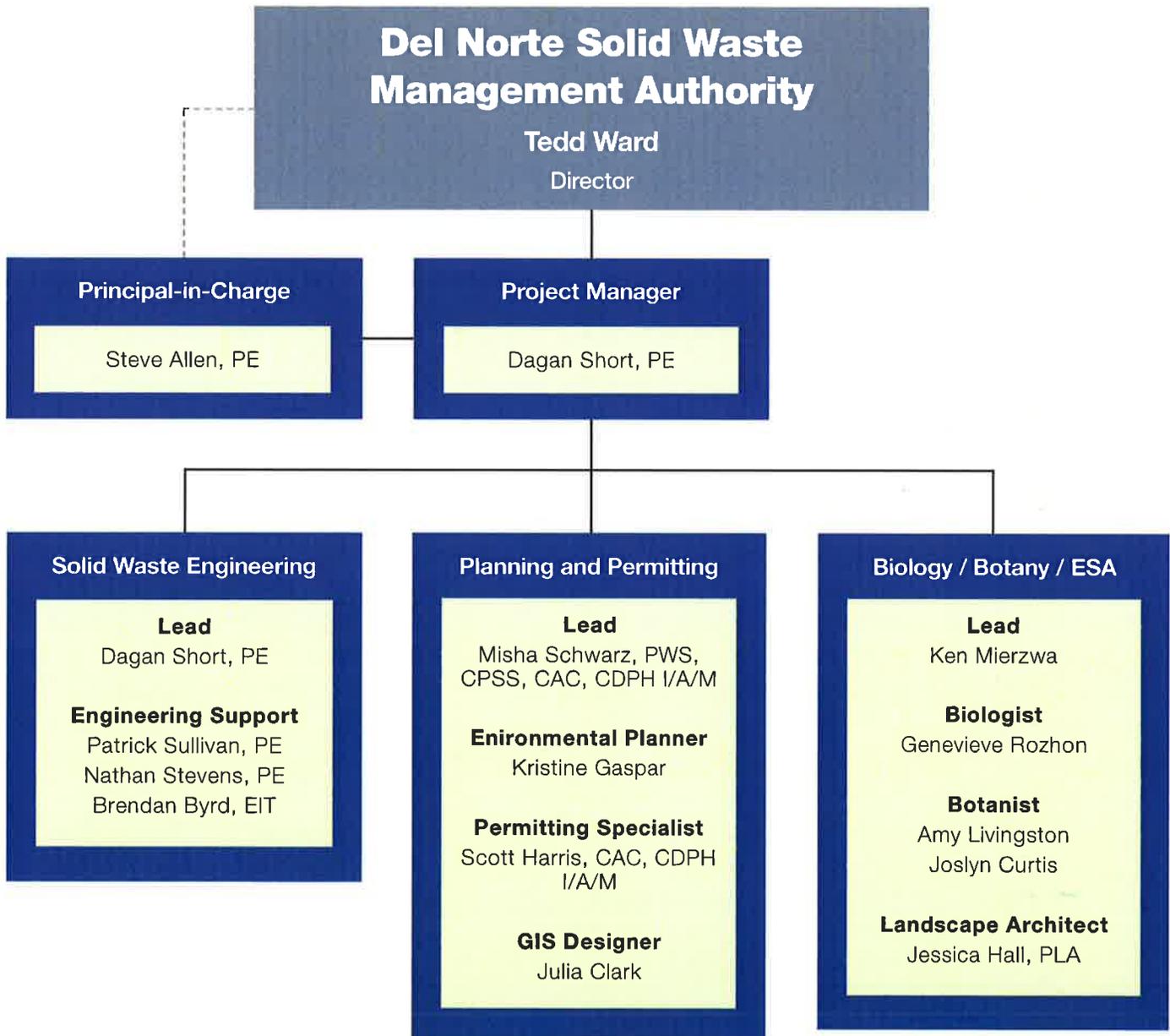
GHD Botanist Amy Livingston conducting a rare plant survey in Del Norte coastal wetlands

Project Manager Dagan Short's broad transfer station experience, coupled with his deep foreknowledge of the Del Norte County's region's needs and goals, as well as the Gasquet and Klamath transfer stations, will prove invaluable to our team's success.

2. Our team

Organizational chart

The organizational chart below demonstrates our proposed team, how work will move from our engineering and environmental science support staff through our management staff and ultimately to the Authority. Brief descriptions of our experience and unique qualifications follow, with full resumes presented in **Appendix B**.



Personnel bios

The following briefly describe the experience, education, and expertise of our proposed team, as well as the regional background pertinent to their roles with regards to the Del Norte Solid Waste Management Authority's Northern Transfer Station Site Assessment. Detailed resumes can be found in **Appendix B**.



Steve Allen, PE
Principal-in-Charge



B.S. Environmental Resources Engineering, Humboldt State University (HSU), 1996
Professional Civil Engineer: CA, OR

Mr. Allen is a proud, third generation native of the North Coast and will serve as our Principal-in-Charge, working directly with our project manager to ensure quality assurance/quality control guidelines are followed and all work is delivered efficiently to the Del Norte Solid Waste Management Authority. He brings over 20 years of experience to our team, overseeing projects involving hydrology, hydraulics, fluvial geomorphology, floodplain design, channel restoration, wetland mitigation construction, stream bank protection, bio-engineering techniques, stormwater management and flood control, open channel water conveyance, grading plans, erosion and sediment control design and plans, construction services, and regulatory compliance in sensitive environments. Mr. Allen has served in a principal-level leadership capacity for all of our team's experience in Del Norte County with the Border Coast Regional Airport Authority (BCRAA) and has performed capital improvements for the Humboldt County Aviation Division and the Guam International Airport Authority. He has managed two fish passage and restoration projects within Del Norte County, one for Pacific Coast Fish, Wildlife, and Wetlands Restoration, and the second working directly for the County's Public Works. Additionally, Mr. Allen has served as principal or project manager on habitat restorations, enhancements, and passage improvements for agencies throughout the Coastal Zone of northern California, including the Coastal Conservancy, CalWater, California Department of Fish & Wildlife (CDFW), and the Humboldt Country Resource Conservation District.



Dagan Short, PE
Project Manager



B.S. Environmental Resources Engineering, HSU, 1998
Professional Civil Engineer: CA, OR, WA

Dagan Short has over 20 years of experience in a variety of civil and environmental engineering projects, in many cases encompassing an emphasis in construction management. Mr. Short has been involved in all stages of engineering design, from traditional civil engineering projects to developing integrated software platforms, possessing an extensive background in numerical modeling for hydrologic and hydraulic forecasting, contaminant transport and fate analyses, geotechnical analyses, and GIS map production. His work in soil/groundwater remediation, wetland mitigation construction, commercial development and infrastructure, and solid and hazardous waste has not only involved serving as Resident Engineer for the BCRAA's RSA Improvements and related wetland mitigation projects, providing oversight assistance with design and permitting, construction management, quality assurance, and compliance with FAA record-keeping procedures, but in sediment and waste transport and removal for landfills in Oregon, Wyoming, Washington, and Alaska.

Mr. Short's broad transfer station experience—performing siting studies, engineering design and layout, permitting support, and developing operational plans on small- to large-scale transfer stations and material recovery facilities in California, Oregon, Washington, and Alaska—coupled with his deep foreknowledge of the Del Norte County's region's needs and goals, as well as the Gasquet and Klamath transfer stations, will prove invaluable to efficiently delivering the Solid Waste Authority's project on time and well within budget.



Patrick Sullivan, PE

Engineering Support



M.S. Environmental Engineering, University of Vermont, 1999; B.S. Environmental Resources Engineering, HSU, 1996



Professional Civil Engineer: CA

Patrick Sullivan is a senior project engineer with over 20 years of experience as a design engineer and project manager. As Hydrogeology Service Line Coordinator for GHD's West Coast, he specializes in water resources with an emphasis in numerical modeling (air, hydraulic, and hydrogeologic), mathematical optimization, and applied geostatistics. Mr. Sullivan has served the Environmental Protection Agency, Department of Defense, Department of Energy, local municipalities, and private clients in air, surface water, hydrology and hydraulic analysis, groundwater, environmental monitoring, river/wetlands restoration, and fish passage. Mr. Sullivan led all hydraulic/hydrologic modeling on the Bay Meadows and Pacific Shores portions of BCRAA's RSA Improvements and Habitat Restoration project, which involved construction oversight, hydrological analysis, groundwater investigations, soil moisture studies, and post-construction hydrologic monitoring. He is also currently lead hydrologist for the Salt River Ecosystem Improvement project, within the Coastal Zone of Humboldt County.



Nathan Stevens, PE

Engineering Support



B.S. Environmental Resources Engineering, HSU, 2013



Professional Civil Engineer: CA

Nathan Stevens is a California licensed civil engineer with five years of experience in water and wastewater infrastructure, specifically focusing on hydraulic modeling and analysis, civil site and utility design, and preparation of construction drawings, specifications, cost estimates, bid documents, technical reports, and memoranda. Mr. Stevens has provided municipal clients throughout Humboldt County and northern California (primarily for Humboldt County and the Humboldt Bay Municipal Water District) with construction management services, encompassing construction inspection and documentation, review of contractor pay requests, and preparation of change orders. Mr. Stevens has also prepared numerous grant applications for utility improvement projects through a variety of State and federal agencies. Additionally, he has acted as Resident Engineer for site development and coastal trail projects, serving the City of Eureka on the Waterfront Trail Project and the City of Blue Lake on the Perigot Park CDBG Project, which involved such tasks as plan review and checking relative to field conditions; environmental permit compliance; sensitive species management; SWPPP compliance; Quality Assurance Plan compliance; daily inspection reports; employee interviews; coordinating laboratory testing; and project documentation management.



Brendan Byrd, EIT

Engineering Support



B.S. Environmental Engineering, HSU, 2015



Engineer-in-Training: CA

Brendan Byrd has experience in a variety of environmental and civil-related engineering projects. Specifically, Mr. Byrd has served as Staff Engineer for projects throughout the North Coast, typically serving the cities of Millbrae, Ukiah, Ferndale, Trinidad, and Eureka with stormwater modeling, urban water management plans, floodplain modeling, water supply and water infrastructure vulnerability assessments, and the design and development of open channel habitat restoration. Within the Coastal Zone of northern California, Mr. Byrd has assisting in restoring hydraulic capacity to the Salt River channel, developing a climate change vulnerability assessment for the City of Trinidad, completing a drainage study for the San Mateo County Harbor District, and developing a database of resources to assist small water and wastewater providers with the management and operation of their systems for the North Coast Resource Partnership.



Misha Schwarz, PWS, CPSS, CAC, CDPH I/A/M

Planning and Permitting Lead



B.S Natural Resource Planning, HSU, 1985

Professional Wetland Scientist; Certified Professional Soil Scientist; Cal/OSHA Cert. Asbestos Consultant; CA Dept. of Public Health Inspector/Assessor/Monitor

Misha Schwarz has over 31 years of experience managing environmental document preparation and environmental compliance, wetlands mapping, and wetlands mitigation projects, ranging from airport and wastewater treatment facilities, to flood control, rock quarry, and trail efforts. Mr. Schwarz has a wide knowledge base in resource and environmental regulatory issues, particularly in the Coastal Zone—on Humboldt Bay and in the Eel River Estuary on such projects as the Salt River Habitat Restoration project (wetlands mapping, mitigation and preparation of the Mitigation and Monitoring Plan [MMP], and construction plans) and the Eel River Estuary Preserve and Centerville Slough Ecosystem Enhancement (wetlands mapping, mitigation, MMP), directing all biological studies—and throughout Del Norte County, including extensive experience in the Coastal Act, Local Coastal Plans, and Clean Water Act 404 and 401 processes.

Throughout his career, he has led the completion of wetland delineations and mitigation plans; soils and agriculture impact analyses; habitat restoration designs; biological assessments; and preparation of Initial Studies, Negative Declarations, Environmental Impact Reports and Statements, and Environmental Assessments, which often involves broad involvement in navigating through the CEQA process. His permitting experience entails U.S. Army Corps of Engineers (USACE) 404 and Regional Water Quality Control Board (RWQCB) 401 permits, Lake and Streambed Alteration Agreements, State Lands Agreements, Conditional Use Permits, Harbor District Permits, and Coastal Development Permits. In addition to leading most wetland delineations and wetlands mitigation work for GHD, Mr. Schwarz recently completed projects at the Del Norte County Regional Airport, encompassing some 26 acres of mapping, property assessment, permitting, and wetlands creation. He has also led wetland delineation efforts and wetlands mitigation for the cities of Crescent City, Eureka, and Arcata; the Humboldt County Resource Conservation District; Humboldt State University; San Francisco Public Utilities Commission; Elk Valley Rancheria; CalTrout; and private developers. He has been involved in most phases of these projects: site identification and investigation (soils, groundwater, and vegetation, etc.), conceptual design, MMPs, preparation of construction plans and specifications, bidding, construction management, and biological monitoring, post-construction monitoring, and permit closeout.



Kristine Gaspar

Environmental Planner



M.P.A. Public Administration, California State University, Sonoma, 1995; B.A. Environmental Studies and Planning, California State University, Sonoma, 1992

Kristine Gaspar has 22 years of experience in environmental planning, CEQA compliance, resource agency permitting, data research and analysis, grant writing, and community surveys. She has successfully led a wide variety of projects through the permitting process, such as a SMART Rail extension, Water Emergency Transportation Authority ferry terminals in the San Francisco Bay, trail projects, and linear infrastructure projects, as well as currently serving as Project Manager for the East Bay Regional Parks MLK Jr Bay Trail Project and the SMART Payran Multi-use Trail Project, both of which involve extensive planning, permitting, and agency coordination within the northern California Coastal Zone.

Additionally, Ms. Gaspar led project planning for the Border Coast Regional Airport Authority's Obstruction Removal project at the Del Norte County Regional Airport in Crescent City, which involved air quality analysis for the CEQA Initial Study/Mitigated Negative Declaration and NEPA Environmental Assessment, and provided lead quality control review for the Central Coast Transfer Station Environmental Impact Report (EIR) for the Mendocino Solid Waste Management Authority. Ms. Gaspar has also managed residential/commercial and land development review/land use projects (EIRs, addenda, construction monitoring) throughout northern California, in Healdsburg, Corte Madera, Santa Rosa, Redwood City, and American Canyon.



Scott Harris, CAC, CDPH I/A/M

Permitting Specialist



B.S. Environmental Science, HSU, 2006; M.B.A. HSU, 2015

Cal/OSHA Cert. Asbestos Consultant; CA Dept. of Public Health Lead Inspector/Assessor/Monitor

Scott Harris has 13 years of multidisciplinary experience in the environmental field, including: project management, Cal/OSHA and EPA regulatory compliance, State and federal agency environmental permitting and coordination, abatement project design, hazardous material assessments, waste characterization/transportation, contractor compliance, project oversight, specification development, technical review, IAQ investigations, and CEQA/NEPA compliance. This has included work in the Coastal Zone, especially in assisting the Border Coast Regional Airport Authority with environmental permitting and hazardous materials assessments for all of GHD's projects at the CEC (which has encompassed assisting with State and federal permitting compliance tasks associated with the initial scope for an Obstruction Removal Project).

Mr. Harris has also recently contributed his permit specialization services to Chevron for a structure demolition project conducted contiguously to Humboldt Bay, to the Humboldt County Resource Conservation District for the Salt River Ecosystem Restoration Project, and to the Elk Valley Rancheria in Crescent City for the Humboldt Road Safety Improvement Project, in which he delivered environmental compliance permit packages for USACE Section 404, EPA PCN, RWQCB 401, and CDFW 1600. For Sierra Pacific Industries, Mr. Harris managed the Eureka Dock Piling Replacement Project, overseeing multiple disciplines under an aggressive timeline to successfully complete a diversity of tasks, including CEQA documentation, biological assessments, agency concurrences, eelgrass studies, the Coastal Development Permit, USACE 404 permit, NCRWQCB 401 Permit, NESHAP demolition report, and biological construction monitoring services. He's currently managing the Broadway Redevelopment Project for the local Carrington Company, developing an economically disadvantaged zone by, among many tasks, leading CEQA documentation, the Coastal Development Permit, Conditional Use Permit, and NESHAP demolition report. This experience, combined with his history of hazardous materials assessments and abatements, has allowed him to steer 100+ large and small projects throughout California, working predominantly within the Coastal Zone.



Julia Clark

GIS Designer



B.S. Geospatial Sciences, Humboldt State University, 2015

Julia Clark is a Spatial Analyst with experience using Geographic Information Systems (GIS) in County, State, non-profit, and educational institutions. She has conducted geoprocessing analysis as well as generated cartographic presentations and spatial models for a wide range of clients throughout northern California, especially within Humboldt and Del Norte counties, including the Humboldt County Department of Public Works, Humboldt County Resource Conservation District, City of Eureka, Tolowa Dee-ni' Nation, Caltrans, and Humboldt State University.

For the City of Trinidad, Ms. Clark has provided GIS services Low Impact Development (LID) Planning and Construction, conducting GIS analysis for a grant proposal. She has served or is currently serving as a GIS Analyst on all of GHD's ongoing wetland mitigation work, including for the Salt River Ecosystem Restoration Project and the Eel River Estuary Preserve Enhancement Project, as well as on the Dune Vulnerability Study and Adaptation Plan for Friends of the Dunes, the Environmental Assessment for the Border Coast Regional Airport Authority's Obstruction Removal Project, and the City of Eureka's Climate Hazard Adaptation Study, working with the majority of the aforementioned GHD staff within the Coastal Zone. She has a vast, multidisciplinary background, a testament to her mapping prowess: She developed and implemented the framework of a new GIS system for Caltrans District 1 Local Assistance projects; she employed cartographic design principles in combination with appropriate data representation to provide public outreach services to the City of Manhattan Beach for a street improvements project; and she assisted in stormwater resource plans for both the City of Eureka and the Humboldt County Community Services District.



Ken Mierzwa

Biology / Botany / ESA Lead



B.A. Management, Northeastern Illinois University (NIU), 1979; Graduate Stud. (Ecology and Systematics), NEIU and University of Illinois at Chicago, 1991-1992



California Rapid Assessment Method (CRAM); Endangered Species Policy and Law; WildCAT Construction Awareness Training, Western Section, The Wildlife Society

Ken Mierzwa has more than 29 years of experience with endangered and threatened species, construction monitoring, wetlands permitting and restoration, environmental review, and project management, including 18 years throughout California, where he currently leads GHD's biology team. As such, he has led biological studies and field work for all of GHD's recent habitat re-establishment north coast restoration projects: not only for wetland and dune re-establishment for the Border Coast Regional Airport Authority (BCRAA), but at Salt River, the Eel River Estuary Preserve, and Martin Slough, his projects often occurring within the Coastal Zone of Humboldt and Del Norte counties. He has prepared biological assessments and habitat conservation plans, has designed related field studies, has conducted biotic inventories, and designed post-project long term monitoring protocols. Throughout northern California and the Midwest, Mr. Mierzwa has prepared Section 404 permit applications and wetland mitigation and monitoring plans, and is experienced in the preparation of NEPA/CEQA environmental impact studies. He currently holds multiple federal and state endangered species permits, and is the author of several book chapters and numerous articles on habitat restoration, amphibian and reptile status and habitat, and general ecology. Appropriately, he served the BCRAA as Biology Team Leader and Project Manager for the RSA and ongoing environmental improvements at the Del Norte County Airport.

Notably, Mr. Mierzwa led our biology team for super-fast-track permitting on Netflix's recent **Bird Box** filming in Del Norte County. His team turned around a CEQA MND; 404, 401, and 1602 permits; a Biological Assessment with U.S. Fish & Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), and film permits with the County, USFS, NPS, and State parks in 57 days, including public comment periods. Failure would have meant missing the filming window, a long delay (cast members contractually committed to other projects immediately after), and no movie currently streaming. This success has contributed to a documented \$1M in direct, local economic benefit to Del Norte County.



Genevieve Rozhon

Biologist



M.S. Natural Resources – Wildlife, Humboldt State University, 2017; B.S. Wildlife, Fish, and Conservation Biology, University of California, Davis, 2009



40-hour HAZWOPER Certification; NEPA Essentials Workshop – Association of Environmental Professionals, 2016

Genevieve Rozhon is a Wildlife Biologist with over 10 years of experience surveying, trapping, and banding avian and other wildlife species, and analyzing and compiling wildlife data for technical reports and GIS maps, all over the U.S. At GHD, her primary duties include nesting bird and special status wildlife surveys; Endangered Species Act (ESA) permitting and compliance; CEQA, NEPA, USACE 404, and SWRCB 401 permitting; and construction/biological monitoring. Locally, she has worked in Del Norte, Humboldt, and Trinity counties (in the Coastal Zone) and has performed extensive field work for the BCRAA, conducting avian surveys for runway improvements, security fence upgrades, and terminal construction, as well as constructing buffers for permitting compliance, and overseeing daily construction activities as biological monitor at Pacific Shores and Bay Meadows. Ms. Rozhon also has experience holding and conducting public outreach meetings.

Recently, Ms. Rozhon co-authored the biology section of the Eel River Estuary Preserve Enhancement project's EIR, and has provided environmental documentation assistance (including GIS services and field surveys) for such clients as the Humboldt Bay Municipal Water District. For the **Bird Box** permitting project on the Smith River, Ms. Rozhon co-authored the BA, 404 permit application, 401 permit application, and CDFW 1600 permit application. Recently, too, she has worked with regulatory permits and stormwater monitoring.



Amy Livingston

Botanist



M.S. Natural Resources – Forestry, Humboldt State University, 2014; Post-Baccalaureate Coursework: Botany (32 units), Natural Resource Planning (15 units), Humboldt State University, 2005; B.S. English and Environmental Studies, Iowa State University, 1999



40-hour Basic Wetlands Delineation Course, Wetland Training Institute; 40-hour California Rapid Assessment Method (CRAM) Practitioners Training

Amy Livingston has more than a decade of natural resource experience, primarily as a field botanist, in northern California. This work has involved wetland delineations, rare plant surveys, research in plant and fire ecology, and revegetation, maintenance, and monitoring of restoration projects, as well as environmental document preparation, such as writing botanical reports for CEQA and NEPA documents. Ms. Livingston's recent work encompasses projects in the Coastal Zone, especially for the BCRAA, in which she served as the GHD team's botanist for the RSA Improvements project, monitoring on-site (and at Bay Meadows and the Pacific Shores Subdivision) mitigation areas, compensating for impacts resulting from runway expansion to meet FAA guidelines and ensure continued vital economic development in the area. Additionally, she performed CRAM wetland analysis for the Martin Slough Enhancement Project, serving the Redwood Community Action Agency, and has performed wetland delineation services along the North Coast for the Mendocino Council of Governments, the County of Humboldt, the City of Fortuna, and the City of Arcata. For CalTrout and the Wildlands Conservancy, she co-authored the Eel River Estuary Preserve Enhancement Project's Habitat MMP.



Joslyn Curtis

Botanist



B.S. Botany (Minor Horticulture Science & Anthropology), North Carolina State University, 2009

Joslyn Curtis has eight years of experience focusing on vegetation ecology and habitat mapping backed by a diverse range of projects: wetland delineations, rare plant surveying, vegetation mapping, restoration, environmental permitting, and biological resource reports and assessments. While with the California Department of Fish & Wildlife, Ms. Curtis has conducted protocol-level habitat mapping in Kern and Tulare Counties; she has also acted as a biological monitor during construction. Recently, for the San Mateo County Harbor District, she performed a biological survey and habitat map assessment for the Pillar Point Harbor West Trail Repair project, in addition to leading mapping and biological assessments throughout northern California (San Jose, Milpitas, Ukiah, Petaluma, etc.). Since joining GHD, she has conducted construction monitoring for sensitive species, as well as several permitting efforts.



Jessica Hall, PLA

Landscape Architect

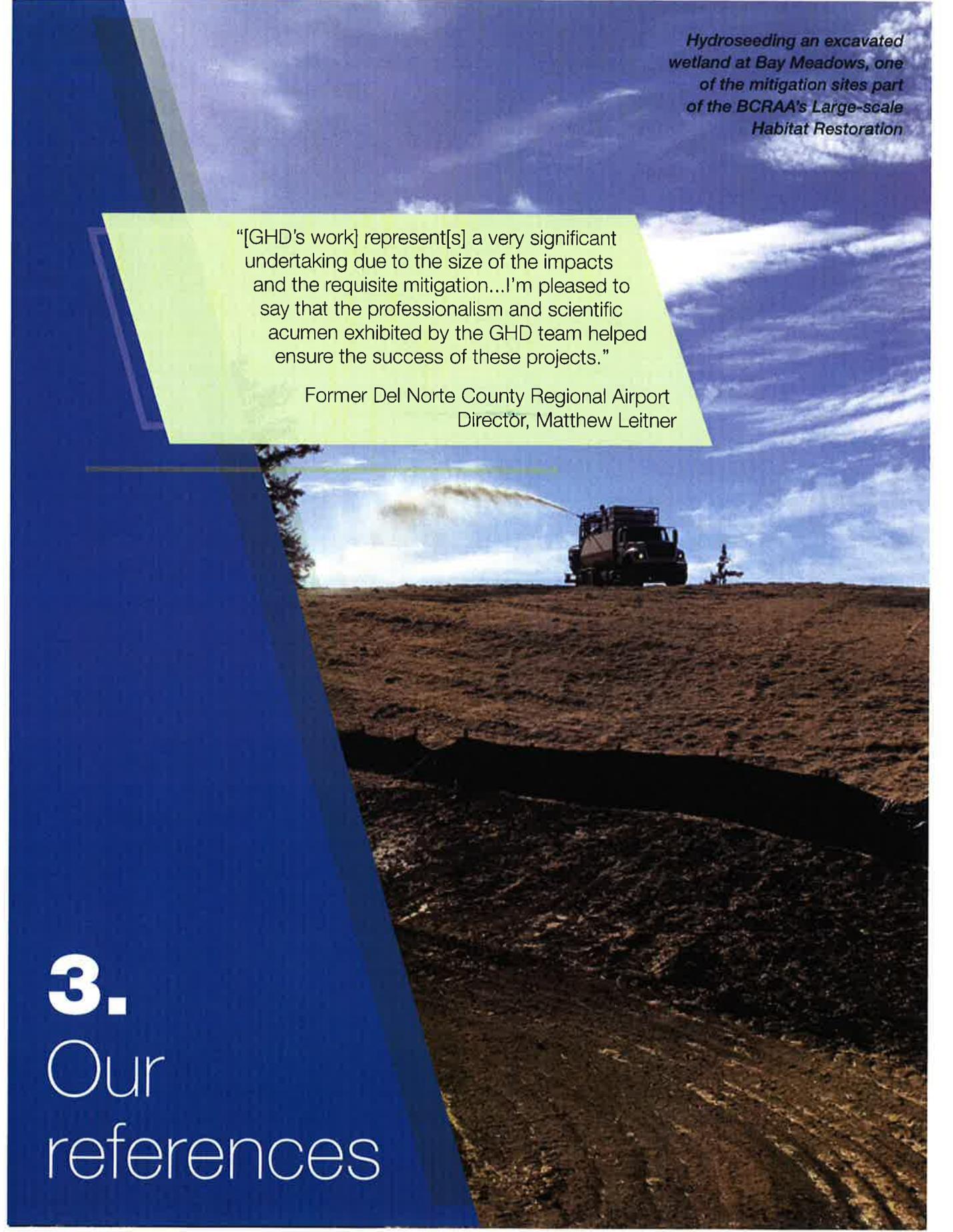


M.A. Landscape Architecture, California State Polytechnic University at Pomona, 2001; B.A. Architecture, Princeton University, 1992



Professional Landscape Architect: CA

Jessica Hall has 16 years planning and designing watershed-sensitive landscapes, with a focus on integrating restored natural systems within urban environments, and over 18 years in project coordination, interacting with permitting agencies, clients, and public and stakeholder groups (many of which work within the Coastal Zone). For the BCRAA's habitat mitigation regarding needed improvements to the Del Norte County Regional Airport's RSAs, Ms. Hall drafted the MMP for the Terminal Replacement; provided QA/QC of the habitat mitigation and monitoring plans for mitigation sites to ensure consistency with the Coastal Development Permit; and drafted the dune restoration concept. She also led the Dune Vulnerability and Adaptation Study for Friends of the Dunes, in which she teamed with a local agency to assess vulnerability of dunes and shoreline along the Eel River Delta, and has assisted with landscape design in the Coastal Zone for the Waterfront Drive Trail Project in Eureka, as well as for the Salt River Ecosystem Restoration Project.

A large truck is shown in the middle ground, spraying a wide area of brown, excavated earth. The truck is dark-colored and has a long nozzle extending from its side. The ground in the foreground is dark and appears to be a trench or a deep excavation. The background is a vast, flat expanse of brown earth under a bright blue sky with scattered white clouds. The overall scene depicts a large-scale land restoration project.

Hydroseeding an excavated wetland at Bay Meadows, one of the mitigation sites part of the BCRAA's Large-scale Habitat Restoration

“[GHD's work] represent[s] a very significant undertaking due to the size of the impacts and the requisite mitigation...I'm pleased to say that the professionalism and scientific acumen exhibited by the GHD team helped ensure the success of these projects.”

Former Del Norte County Regional Airport Director, Matthew Leitner

3. Our references

Comprehensive Large-Scale Habitat Restoration

Border Coast Regional Airport Authority, Del Norte County, CA

In 2011, the BCRAA was facing a congressional mandate: The Runway Safety Areas (RSA) at the Del Norte County Regional Airport weren't able to meet current Federal Aviation Administration (FAA) airport design standards. Accordingly, BCRAA had to finish all safety improvements by December 31, 2015, or the FAA would cease commercial air service, dealing the region a dire financial blow.

To address the needed improvements (and space for the RSAs) would entail an intimidating breadth of wetland mitigation and habitat restoration/re-establishment. This meant impacts to 17 acres of protected wetlands (which would eventually be turned over to the California Department of Fish & Wildlife), two special-status plant species, and upland dune environmentally sensitive habitat areas (ESHA), all in the Coastal Zone of northern California, considered one of the most difficult places in the U.S. for permitting, overseen by the California Coastal Commission (CCC). The project became known as an "impossible" undertaking within the local consultant community: The CCC is notoriously stringent and the sheer size of wetland mitigation required creativity in approaching involved agencies, landowners, tribal entities, and the commission itself, navigating typically divisive goals and public needs.

GHD knew the RSA improvements would require a complex permitting process and development of a complicated mitigation package, affecting four sites: On-airport, Point Saint George County Park, the Pacific Shores Subdivision, and the Bay Meadows residential development. GHD initially found that few suitable sites were actually available, and of those that were, each area presented its own unique challenges—scale, because of the existence of special-status species, due to private interests and litigation risks, because of a sizable homeless population, or because difficult debris clean-up included abandoned cars and hypodermic needles.

Across the four mitigation sites, GHD organized a complicated and intimidating mitigation and permitting process, obtaining:

- Section 404 permit from the U.S. Army Corps of Engineers (USACE)
- 401 Certification from the North Coast Regional Water Quality Control Board (RWQCB),
- A completed Section 7 consultation with the U.S. Fish & Wildlife Service (USFWS),

- Lake and Streambed Alteration Agreement, CDFW
- Two coastal development permits, CCC
- Timber harvest plan with the California Department of Forestry and Fire Protection

Stakeholders covered two states, two counties, two cities, and two Native American tribes, with decisions facilitated by a board comprised of municipal, county, and tribal governments, as well as numerous regulatory agencies. To bring together sometimes polarized stakeholders would be to champion the project's goals: regional economic development (preservation of future commercial air service, over \$34 million [US] of investment, construction jobs) and science-based open space preservation and habitat restoration, complimenting and building upon the prior efforts of many important resource agencies. RSA construction was completed within budget and almost two months ahead of schedule.

Over the next five years, building upon the success of this project and the relationship forged with the BCRAA, GHD will continue post-construction monitoring, obstruction removal, terminal replacement support, and other projects for the agency and local community. At Pacific Shores, GHD will continue to monitor success of the site for five years post-project; at the end of that time, the acquired parcels and restored road segments will be turned over to the CDFW and will become part of the Lake Earl Wildlife Area. According to past Airport Director Matthew Leitner, the project "represent[s] a very significant undertaking due to the size of the impacts and the requisite mitigation, as well as the complications posed by mitigating at certain sites, such as Pacific Shores." He continues: "I'm pleased to say that the professionalism and scientific acumen exhibited by the GHD team helped ensure the success of these projects."

Almost 30 GHD staff members from around the world were able to work together to not only deliver on all of the BCRAA's congressionally-mandated goals, but to demonstrate that the millions of federal dollars were well-spent, transforming a project once considered "impossible" into a reality.

Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.

Dates: 12/2011 - ongoing

Address: 150 Dale Rupert Road, Crescent City, CA 95531

Reference: Susan Daugherty, Systems Director, sdaugherty@co.del-norte.ca.us, 707.464.7288

Photos

1 Reestablishment of 16 acres of wetlands at Bay Meadows using a native seed mixture and over 73,000 containerized plants

2 Biologist Genevieve Rozhon conducting a bird survey at the Pacific Shores mitigation site

3 Road removal amongst the dunes at the Pacific Shores mitigation site



Salt River Ecosystem Restoration

Humboldt County Resource Conservation District, Eel River Estuary, CA

Since 2009, GHD has served as the prime environmental and engineering firm for the \$34M Salt River Ecosystem Restoration, a project which began with the goal to restore passage to over 15 miles of historic salmonid spawning tributaries and 300 acres of tidal wetlands to support a broad list of special status and native species. Working with the Humboldt County Resource Conservation District (RCD), GHD has led this multi-phase ecosystem restoration encompassing 7.7 miles of stream restoration, 700,000 cubic yards of cut/fill, and multiple in-stream habitat structures. The ultimate goals of the project are to A) restore the Salt River channel and adjacent riparian floodplain by adding channel habitat complexity, increasing hydraulic conveyance, and constructing habitat features that re-establish ecological processes; and B) restore tidal connectivity to historic tidal wetlands to allow for the natural evolution of diverse and self-sustaining salt- and brackish-water tidal marshes, intertidal mudflat, and shallow water habitats.

GHD staff became involved very early in the project, serving on advisory committees and helping with feasibility studies and grant applications. As funding became available, GHD completed a series of technical studies, which included wetland delineations, special-status plant surveys, and animal protocol surveys with GIS mapping, using the same on-the-ground approach as proposed in GHD's Scope of Work for this Ducks Unlimited project. GHD also assisted in developing State and federal Biological Assessments and Avoidance Measures for consistency determinations of threatened and endangered species, including Longfin Smelt,

Yellow-billed Cuckoo, Willow Flycatcher, Coho Salmon, and Tidewater Goby.

GHD prepared and facilitated the following permits, environmental documents, and construction documents:

- California Department of Fish & Wildlife (CDFW) (1600)
- Regional Water Quality Control Board (401)
- U.S. Army Corp of Engineers (404)
- Section 7 Consultation through U.S. Fish & Wildlife Service (USFWS) and National Marine Fisheries Service for threatened and endangered species
- California Coastal Commission (CCC) (CDP)
- State Historic Preservation Office
- Hydrodynamic modeling and FEMA floodplain certification
- County of Humboldt Conditional Use and Grading permits
- SWPPP and Construction Water Management Plan
- Construction Plans and Specifications, access agreements/easements
- Extensive stakeholder outreach and public meetings

Design work has involved 1- and 2-D hydraulic modeling and development of bioengineering, LWD/ELJ structures, and revegetation compatible with competing objectives such as re-establishment of diverse habitats, long-term adaptive management and maintenance approaches to sedimentation, and natural recruitment of vegetation through a channel corridor that bisects 40 private parcels.

Dates: 2010 - ongoing

Address: Seven miles through Ferndale, CA

Reference: Curtis Ihle, Program Manager, 707.498.5930



Water Storage Tank Hazard Mitigation

Big Rock Community Services District (CSD), Hiouchi, CA

The Big Rock CSD's 100,000-gallon water tank is located on a steep hillside with grades of 35 percent near the toe of the hill north of town, and upwards of 60 percent at and above the water tank. Built in 1971 under the California Building Code, which did not include many of the seismic requirements in the current code, the tank sits on the top of a fill prism/earthen pedestal, which was constructed by cutting into the hillside and filling in the slope below.

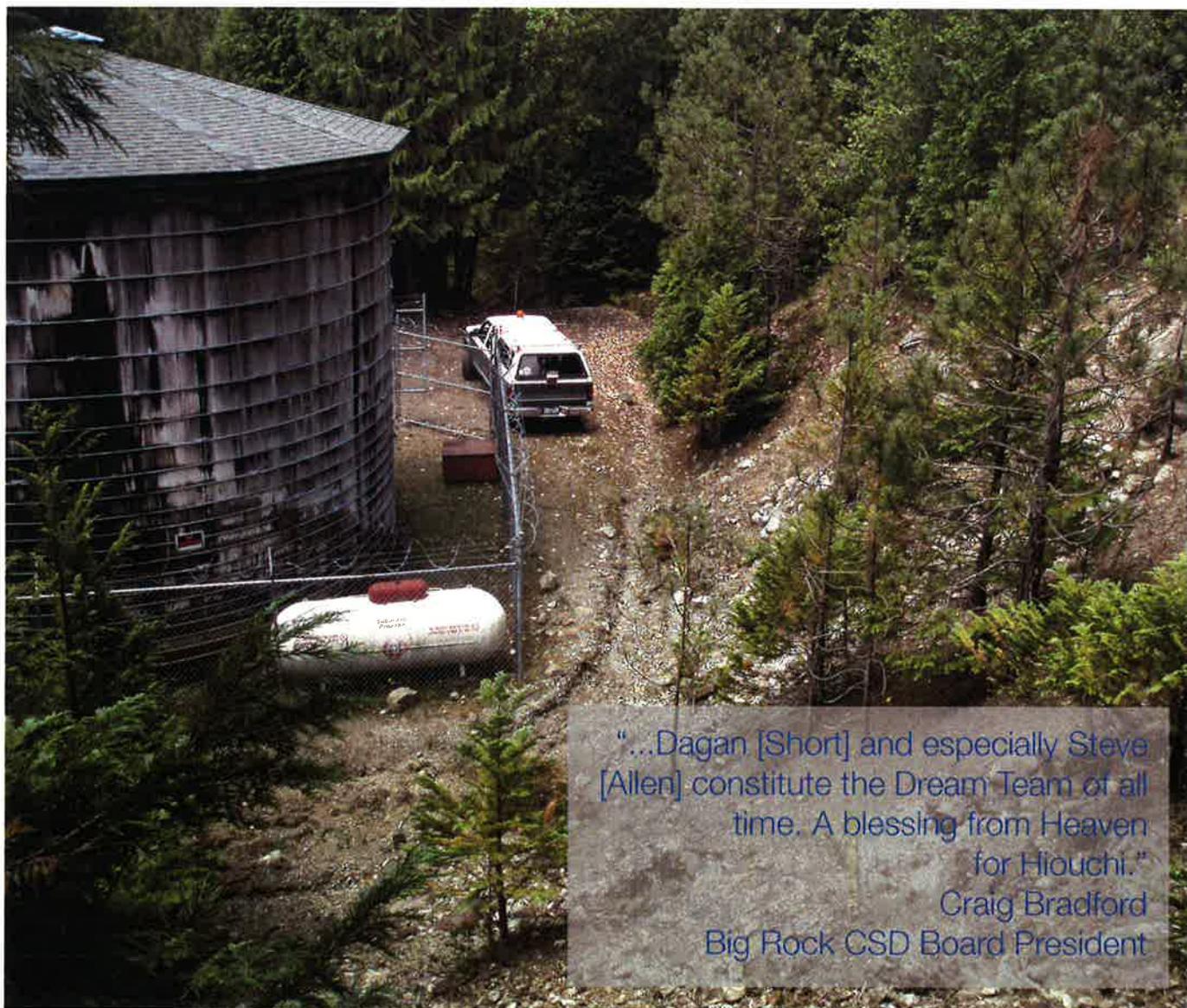
Because the pedestal is now eroding due to significant runoff from the mountain above, analysis showed that a moderate earthquake in the winter, when water erosion is at its worse, would send the water tank, the concrete pad upon which the tanks sits, and the earthen pedestal down the side of the mountain onto Hiouchi homes and businesses.

Not only would such an event destroy the township's municipal water supply and private property, it could lead to possible loss of life. Thus, GHD worked with the Big Rock CSD to complete a Hazard Mitigation grant application for submittal to CalEMA and FEMA in order to replace the tank with a suitably design bolted steel tank and avoid potential catastrophe. GHD was responsible for all aspects of engineering and permitting. GHD is currently overseeing construction, anticipated to be complete in Spring of 2019.

Dates: 2014 - ongoing

Address: Jedidiah Way, Hiouchi, CA

Reference: Craig Bradford, CSD Board President, craig.bradford@gmail.com 707.458.9933



4. Our approach

GHD staff frequently perform wetland delineations, as well as Sensitive Natural Community mapping and ESHA evaluation and mapping, both inside and outside of the Coastal Zone.

Understanding

The Del Norte Solid Waste Management Authority (Authority) is interested in sitting a new small volume solid waste transfer station to serve communities in the northern regions of Del Norte County, including the Fort Dick, Smith River, and the Tolowa Dee-ni' Nation tribal lands. To that end, the Authority seeks assistance with the mapping, assessment, and environmental review of potential sites for a small-volume transfer station to serve these areas.

When completed, the Northern Transfer Station is anticipated to operate in a similar manner to the Authority's existing small-volume transfer stations located in Klamath and Gasquet. Both of these facilities are without power, running water, sewer hookup, or reliable cell phone coverage, and operate no more than three days per week.

Additionally, the Authority has identified that the new Northern Transfer Station will need appropriate grading and paving to create unloading bays above three open-topped, 40-cubic-yard dumpsters, using similar traffic layouts to those at the Klamath and Gasquet transfer stations, with a small gate shack.

Approach

The following is a description of how the GHD will complete the proposed scope of services, as well as the anticipated, corresponding deliverables.

A. Kick-off, Initial List, First Tier Assessment, and Mapping

GHD's spatial sciences team uses Geographic Information System (GIS) technology to acquire, compile, manipulate, interpret, and visualize data to reveal geographic patterns and relationships. By bringing together large volumes of disparate data, decisions that were once largely based on guess work become more quantitative and can be powerfully presented using map-based tools. We can be involved at all stages of delivery: from planning and project management to data acquisition, processing, modeling, reporting, map production, and web deployment.

GHD's spatial sciences team has direct and relevant experience harnessing the power of automated multi-criteria analysis modeling, using routing tools to identify driving distances, and supporting field staff in efficient, thorough, and accurate GPS data collection.

This first task begins with a kick-off meeting with the Authority's Director, Tedd Ward, and Authority staff to review background information related to small-volume transfer stations, namely, related to the Klamath and Gasquet transfer stations. GHD assumes that during this meeting the Authority will provide a KMZ file, generated from a standard GIS shapefile, of the County's Assessor Parcel (AP) information. GHD also assumes the KMZ file will provide pertinent metadata, including the Assessor's Parcel Number (APN) and the area, in square feet, of each parcel.





Dr. Fine Bridge (left) and Clifford Kamph Park (right), the South and North limits, respectively, of the study area defined within our First Tier Criteria

During the kick-off meeting, the Director and GHD will review the scope of work and schedule, as well as review and possibly revise or amend the First (see below) and Second Tier (see Task B) criteria to be used to assess each potential site.

For the First Tier approach, we plan to develop a multi-criteria analysis to identify locations that are appropriate for the project location. We will compile the spatial datasets listed in the First Tier Criteria and then fine-tune an existing model we have that will run a series of selections on the datasets to produce the final list of parcels that meet the criteria. We will then calculate the centroid of each parcel to get the GPS coordinates.

GHD will develop a list comprised of approximately 12 to 18 potential properties meeting the following First Tier Criteria (or all properties meeting these criteria if there are fewer than 12):

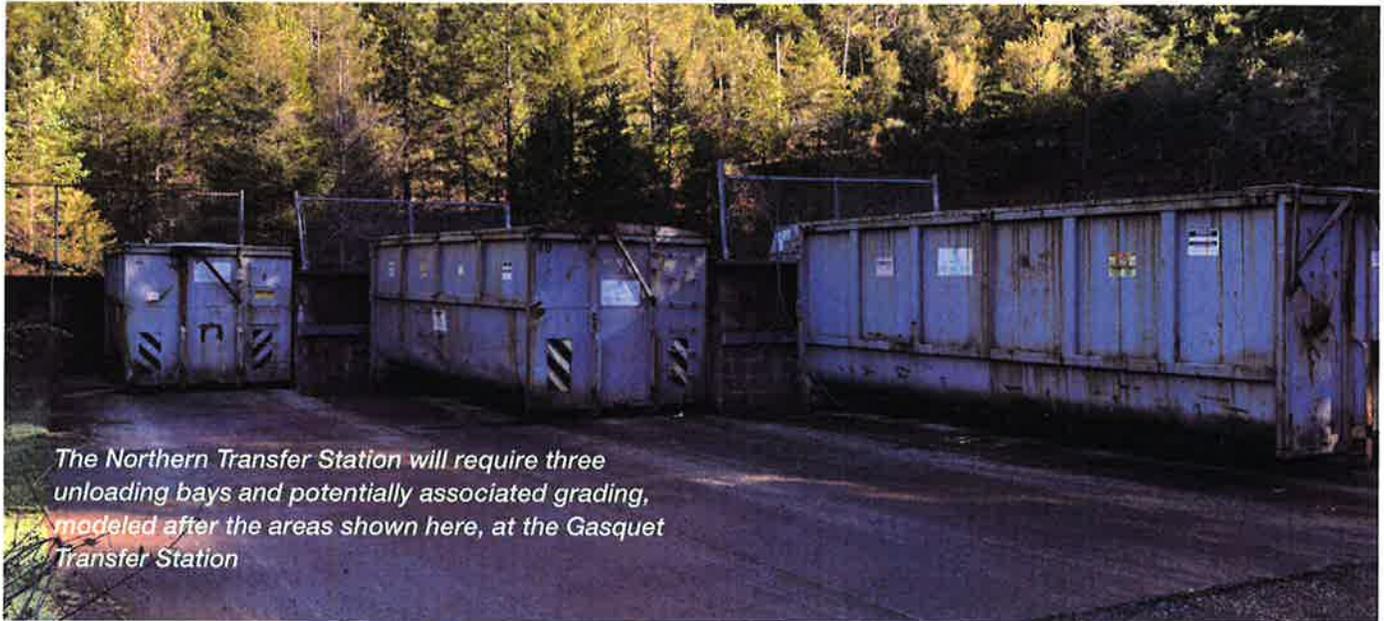
- North of Dr. Fine Bridge, South of Clifford Kamph Park, East of US 101, and accessible via a relatively short route (less than five [5] miles) from 101 along paved roads
- Zoned Commercial (C-3, C-4), Manufacturing and Industrial (M), or Public Facility (PF)
- Total land area between two (2) and 15 acres total, with at least 1.5 acres of land that can be graded for a public unloading area, with potential for grading a height difference of not less than eight (8) feet across the property

- Owner is potentially interested in selling, or the property could otherwise be acquired (e.g., through receivership of tax lien sale) for use as a Northern Transfer Station

Task A Deliverables: GHD will develop a single color map showing the location of each property that meets the above First Tier Criteria. A list will also be provided in the form of a table summarizing the following information for each property to the extent such information is available:

1. Address, assessor's parcel number(s), and GPS coordinates (near the center of each property)
2. Total acreage and total existing paved acreage
3. Respective driving distances from US 101, the Smith River Post Office, and Howonquet Hall
4. Qualitative comparison of improvements to property, existing structures that do not require demolition (if any), and an estimate of the usable floor space in such structures

The Task A deliverables list will also feature an appendix containing information and notes pertaining to each property gathered from relevant real estate listings or other public sources of information, including but not limited to each property's zoning and associated principally permitted activities and/or conditionally permitted activities, documented contamination issues, or potential jurisdictional issues. Another appendix will list some parcel numbers for properties eliminated from further analysis based on the First Tier Criteria.

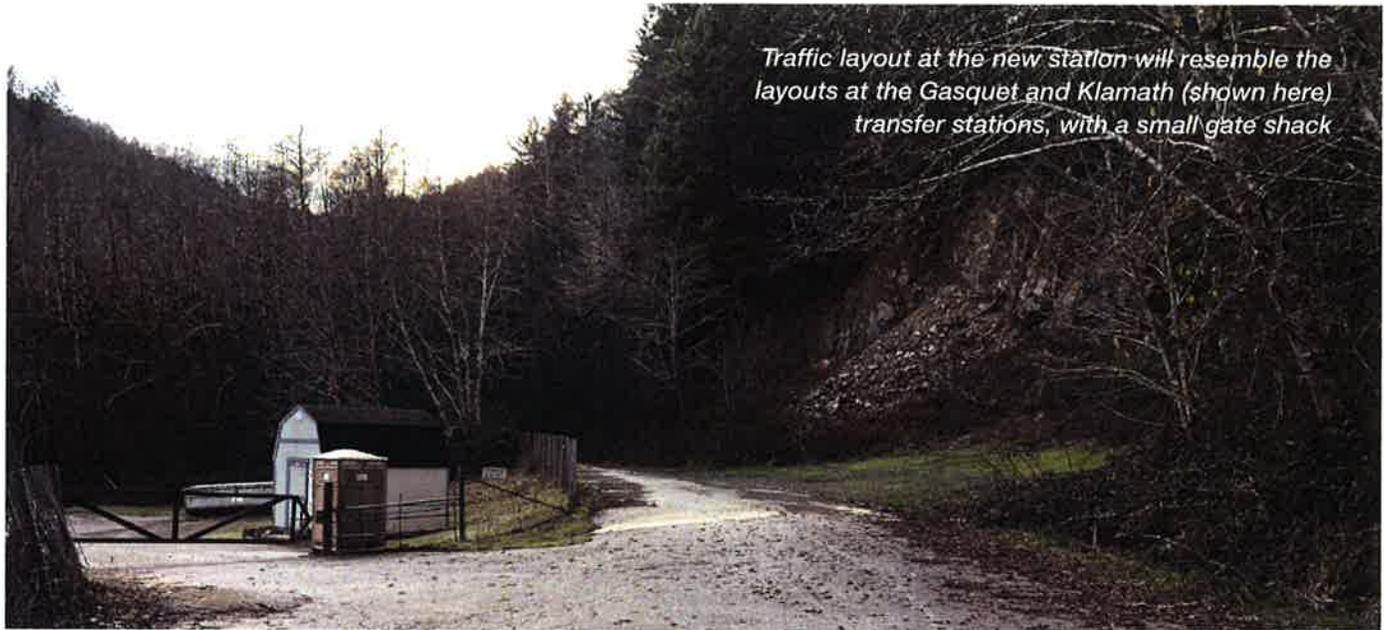


B. Second Tier Assessment and Recommended Improvements

For this task, GHD will assess each property identified in Task A (those that meet the First Tier Criteria) using additional Second Tier Criteria. It is understood that initial environmental and grading assessments for these criteria to be at the planning level and subject to significant uncertainties. Our desktop analysis of biological and environmental resources will involve searching the appropriate databases to identify any Special Status animals or plants that may occur, or that have habitat at or within proximity of the properties being considered. Databases maintained by the California Department of Fish & Wildlife (CDFW), the California Native Plant Society (CNPS), the U.S. Fish & Wildlife Service (USFWS), and the National Oceanic and Atmospheric Administration (NOAA) Fisheries will be searched.

The Second Tier Criteria for each property will include the following:

1. Potential grading areas for three loading bays at least eight (8) feet below unloading areas without creating areas where stormwater could pond
2. Access to water, sewer, phone, and cellular services
3. Description of existing structures and improvements on the property
4. Assessment of and potential use of disposition of all major areas of work (demolition, pavement removal, etc.) necessary prior to grading
5. Approximate area of wetlands and estimated limits and acreage of likely or possible wetland setbacks, if any
 - GHD is aware that a significant portion of the planning area is located within the boundary of the California Coastal Zone and, thus, because both types of wetlands are regulated by the Coastal Commission within this zone, the approximate areas of one-parameter and three-parameter wetlands will be estimated.
6. Approximate areas of environmentally sensitive habitat areas (ESHAs), easements, associated setbacks, and total Estimated Usable Acreage
 - For properties located outside the boundary of the Coastal Zone, only the approximate area of three-parameter wetlands, as regulated by the U.S. Army Corps of Engineers (USACE) will be approximated.
 - For all properties that fall within the boundary of the Coastal Zone, GHD will estimate approximate areas of vegetation communities that may be considered as ESHA under the Del Norte County Local Coastal Program. For properties outside the Coastal Zone, GHD will approximate the boundaries of vegetation communities considered Sensitive Natural Communities by CDFW under CEQA.
 - GHD will not perform protocol level botanical surveys during this initial assessment of environmental constraints, but the potential habitat for Special Status plant species will be evaluated by a botanist during the site visit. If any Special Status plant species are observed during the site visit, they will be added to the map.
7. An assessment of stormwater flows (or could flow) across the site during heavy rains
8. Estimated area and volume of material to be graded, and estimated volume of fill material needed for or generated by grading



9. Estimated area of additional pavement necessary
10. Known issues which could impact negotiations for purchase or acquisition, such as proximity to neighbors, depth to groundwater during winter, known sensitive species or habitats, additional property-specific permit requirements, or challenges associated with property ownership or access
11. Planning-level estimates of purchase price range based on asking price or estimated cost-per acre and acreage or each parcel

During the second tier site assessment, GHD will identify biological and environmental resource constraints associated with each site, to be included in the overall evaluation of the suitability of each site. As shown in previous sections, GHD staff are extensively experienced working within the Coastal Zone of Del Norte County, and will bring this expertise to each site evaluation. Accordingly, the GHD team is deeply familiar with Del Norte County's Local Coastal Program, which we will consult for guidance on ESHA identification and buffer size.

Our first step in assessing each property will be to determine whether it falls within the Coastal Zone. Potential sites located inside the Coastal Zone will have more restrictions on their development. GHD is familiar with Section 30233 in Chapter 3 of the California Coastal Act, which provides only a narrow list of allowable uses for diking, filling, or dredging wetlands. Likewise, Section 30240 of the Coastal Act restricts impacts to upland ESHA to only those uses that are dependent upon the particular resource.

More flexibility exists for properties outside of the Coastal Zone. These properties may contain three-parameter wetlands regulated by the USACE, though it is possible to carry out the project and thereby impact these resources through on-site or off-site wetlands mitigation at a ratio to be determined during the permitting process. Similarly, Sensitive Natural Communities, those ranked as S1-S3 by the CDFW, may be impacted outside the Coastal Zone by the project with implementation of on-site or off-site mitigation at a ratio to be determined during the permitting process. Identifying a property with limited biological and environmental resource constraints may save the Authority substantial time and cost associated with the environmental documentation process, as well as with mitigation design and implementation.

Our proposed staff for the initial property assessments, shown in **Section 2** of this proposal, include Misha Schwarz, a Certified Professional Wetland Scientist, and experienced botanists and wildlife biologists (Genevieve Rozhon, Amy Livingston, and Joslyn Curtis). GHD staff frequently perform wetland delineations, as well as Sensitive Natural Community mapping and ESHA evaluation and mapping, both inside and outside of the Coastal Zone.

As demonstrated in our team resumes, our GHD team also has extensive experience with CEQA, having produced numerous Categorical Exemptions, Initial Study/Mitigated Negative Declarations (IS/MNDs), and Environmental Impact Reports (EIR). CEQA compliance and permitting will be led by senior level scientists (Misha Schwarz and Ken Mierzwa) with over 30 years of CEQA and permitting experience. In addition to CEQA, GHD staff have ample experience with successfully

permitting projects, completing CEQA documentation and permitting for the following type of projects: structural development, infrastructure improvements, utility system enhancements, habitat restoration, and large-scale flood management projects. GHD staff are familiar with interpreting technical reports and sourcing relevant data and legal standards in order to conduct thorough impact analyses and complete complex permit applications.

GHD can provide complete services—from initial site assessment all the way through permitting, project implementation, and construction management. GHD offers a wide range of experts to address a variety of projects, including environmental scientists and planners, hydrologists, engineers, air quality scientists, geospatial scientists, geologists, and hazardous material specialists, in addition to the botanists, wildlife biologists, and Certified Professional Wetland Scientist mentioned above.

Task B.1. Deliverables: GHD will compile a list and map of between two (2) and four (4) properties most favorably meeting the Second Tier Criteria. The list will be in a table format and will summarize each information for each property to the extent such information is available:

1. Assessor's parcel number(s) or other property identifier
2. Nearest location for accessing water, sewer, phone, and cellular services
3. Estimated usable acreage
4. Estimated area and volume of grading needed
5. Estimated area of additional pavement necessary
6. Qualitative comparison of likely grading and/or paving effort and other known issues, including approximate height difference across each property, noting any environmental sensitive or wetland habitats, or known endangered or sensitive species (including Special Status species) on the property

Task B.2. Deliverables: GHD will also develop and submit to the Authority an Initial Site Assessment Report, which will include:

1. A narrative comparing the properties listed and described in the deliverable for Task A to those in Task B;
2. A narrative summarizing the Second Tier Criteria based on a comparative assessment of each property, as well as the respective and relative potential advantages of each property, and the respective and relative potential advantages of between two and four sites recommended for further analysis.

Task B.3. Deliverables: Finally, GHD will meeting with Authority staff to present the list of Second Tier properties

and the Initial Assessment Report, as well as to discuss other details discovered during the site investigations but not necessarily included in the report, such as ownership, asking price, or estimated market value for each property.

Within two (2) weeks of receiving the Authority staff's written comments on these Task B deliverables, GHD will prepare final versions for presentation to the Authority Board of Commissioners. The Final Northern Transfer Station Site Assessment Report will feature a separate map for each site recommended for further assessment, including indicators for areas of possible wetlands, sensitive species, or habitats. Maps will also indicate locations of any water, sewer, septic, or power availability for each site. Notes on each site map will indicate current level of coverage by cell phone providers.

C. Assistance Negotiating Multiple Rights of First Refusal

For this task, GHD will assist Authority staff and legal counsel in negotiating and purchasing Right of First Refusal to Purchase each of the properties designated by the Authority Board (see Assumption #1 below). Authority staff will drive this task, anticipated to begin after deliverables for Task A are submitted, overlapping with Task B. It is assumed GHD will not act as an agency representative during these negotiations. GHD anticipates that services for this task will entail review and comment regarding related documents and consultation with staff and legal counsel, but will not include the drafting or revising of these documents.

Work performed for this task will be paid on a time and material basis. It is assumed that this task will take approximately 60 hours. The actual required effort may be less or more than this estimate.

D. Assistance Developing Design and Engineering Request for Proposal

GHD will assist Authority staff in the development of a Request for Proposals (RFP) to select an Engineering or appropriate design firm to design and produce preliminary construction documents, all necessary and appropriate permitting prior to construction, and final construction documents, as well as to draft and implement a construction quality assurance plan and potential additional tasks associated with the implementation of a Mitigation, Monitoring, and Reporting Program (to be determined by CEQA).

D.2. Develop checklist and associated documents for CEQA: Upon direction from Authority staff, GHD will propose an

amendment for completion of environmental documentation necessary to comply with CEQA. GHD's approach to this process will depend on if the site(s) being considered are within the Coastal Zone. The amendment would involve identification of the special studies required by the CEQA process, which may include: phase I environmental site assessments, cultural surveys, protocol level botanical surveys, protocol level wildlife surveys, and wetland delineations. The amendment would scope and identify the special studies required by the CEQA process for up to three (3) alternative locations, in addition to the proposed project site location.

The amendment would also involve preparation of a CEQA checklist, IS/MND, and Mitigation, Monitoring, and Reporting Program. The IS/MND would feature limited analysis of up to three (3) alternative project locations or site plans to reduce potential negative environmental impacts, and full analysis of the selected project alternative. The alternatives analysis would include the location of each site in relation to the Coastal Zone, presence of critical habitat or potential habitat for Special Status species, presence of wetlands, or presence of other environmentally sensitive resource(s). GHD will base the analysis of project alternatives on the findings of Task B, utilizing Deliverables B1 and B2.

The amendment would state that the most current version of the Initial Study Checklist (Appendix G of the CEQA Guidelines) would be used in the preparation of the CEQA checklist and IS/MND. The amendment would assume a Draft submission of the IS/MND to the Authority for review and comments, followed by consideration and adoption of some or all of the comments by the contractor into the IS/MND. GHD would submit the Final IS/MND to the Authority within two (2) weeks of GHD receiving written comments on the Draft IS/MND. The amendment would state that GHD would circulate the Final IS/MND with a list of recipients to be provided by the Authority, and would respond to up to 20 individual comments. The amendment would assume that the Authority would adopt the IS/MND with assistance from GHD, if desired.

Upon acceptance of the CEQA document by the Authority, GHD could take on the additional tasks of permit acquisition. If the Authority is interested, GHD's amendment could encompass the acquisition of all required permits for the project, which may include, among others, a Conditional Use Permit, a Grading Permit, a County or State Encroachment Permit, and, potentially, a Coastal Development Permit, if the site is within the Coastal Zone. If impacts to wetlands are anticipated outside of the Coastal Zone, GHD could help

identify whether on-site mitigation is feasible, or whether off-site mitigation would be necessary, and could assist in the design of required wetland mitigation area(s).

Assumptions and Exclusions

1. The Authority Board will choose up to four (4) properties to further consider before GHD initiates Task C.
2. Under Task D2, GHD would conduct special studies for the selected project alternative, and not on the considered project alternatives.
3. Under Task D2, the Authority Board will provide a list of recipients to whom GHD will circulate the Final IS/MND.
4. Under Task D2, GHD will respond to up to 20 individual comments on the Final IS/MND.
5. Work not specifically defined in the tasks above is not included in this scope of work.
6. No survey, geotechnical, archaeological, environmental, permitting, wetland delineations, cost estimating, or design services are included in this scope of services.
7. Should additional services not identified in this scope be requested or required, they can be provided with a scope and budget amendment.

A.

Exhibit

A

Price proposal summary

The following Appendix provides Exhibit A, per RFP requirements, however, for the sake of efficiently conveying the requested information, we have also provided a simplified price proposal, as well as a gantt chart for the schedule, using the Authority's proposed dates and our understanding of the tasks.

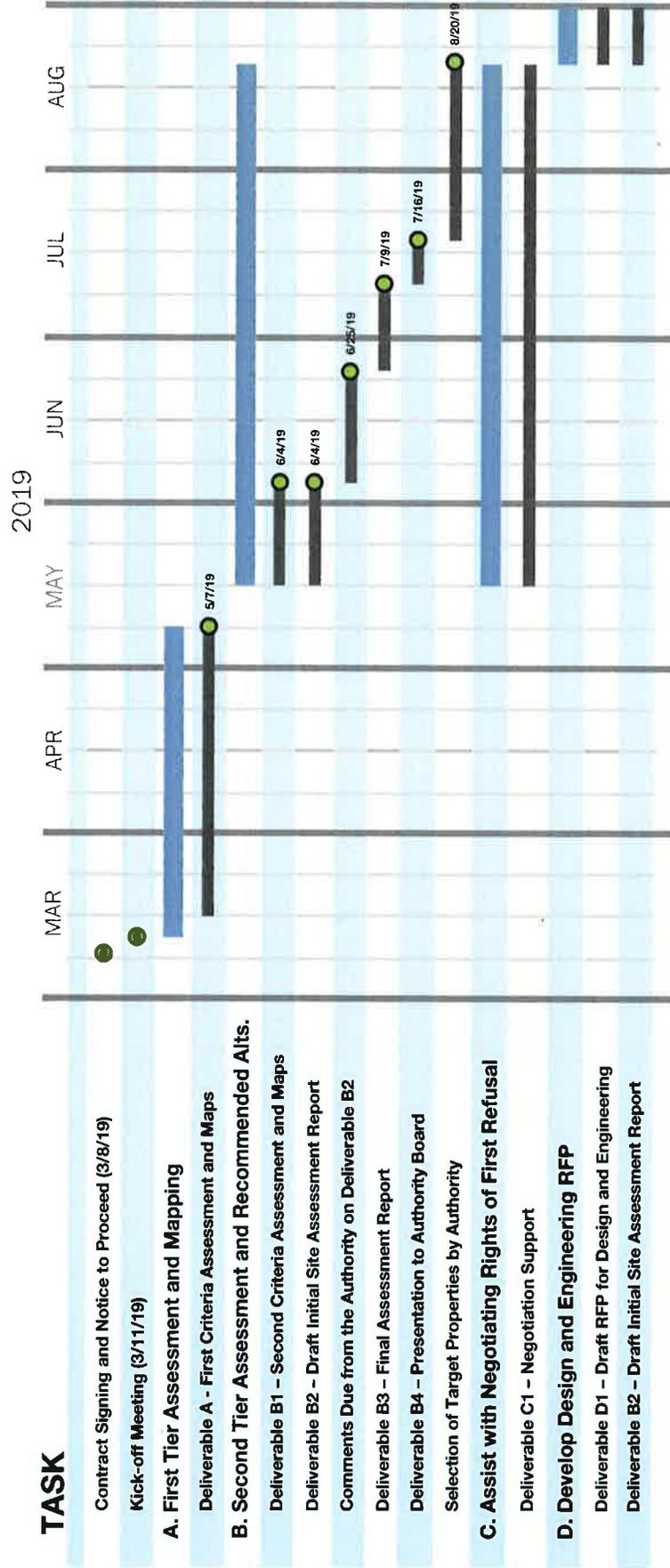
Tasks	Direct Labor	Reimbursable	Subconsultants	Total Cost
A. Kickoff Meeting, First Tier Assessment, and Mapping	\$7,804	\$0	\$0	\$7,804
B. Second Tier Assessment and Recommended Alternatives	\$34,437	\$1,100	\$0	\$35,537
C. Assistance Negotiating Multiple Rights of First Refusal	\$11,100	\$0	\$0	\$11,100
D. Develop Design and Engineering RFP	\$4,903	\$0	\$0	\$4,903
	\$58,244	\$1,100	\$0	\$59,344

Request for Proposals for Northern Transfer Station Site Assessment Services

Exhibit A Project Timeline & Price Proposal

	Request	Proposed	Price Proposal
Release RFP	30-Nov-18		
RFP Questions	14-Jan-19		
Proposals Due	28-Jan-19		
Contractor Selected	19-Feb-19		
Contract signed	8-Mar-19		
Deliverables			
A	Kickoff Meeting 11-Mar-19 A - First Criteria Assessment & Maps 7-May-19 B1 - Second Criteria Assessment & Maps 4-Jun-19 B2 - Draft Initial Site Assessment Report 4-Jun-19 C1 - Negotiating Support B3 - Final Assessment Report 9-Jul-19 B4 - Presentation to DNSWMA Board 16-Jul-19		A: \$ 7,804 lump sum
B			B: \$ 35,537 lump sum
Selection of Target Properties by DNSWMA	20-Aug-19 ?		
D	D1 - Draft RFP for Design & Engineering D2 - Proposed Amendment for Completion of Environmental Document (included)		D1: \$ 4,903 lump sum
C	Hourly Rate for Task C1: \$ 185 / hour x 60 hours		\$ 11,100 (for 60 hours)
Total Price Proposal A + B + D1 + C			\$ 59,344

Schedule





B.
Our
resumes



Steve Allen, PE

Principal-in-Charge



B.S. Environmental Resources
Engineering, Humboldt State University
(HSU), 1996



Professional Civil Engineer: CA, OR

Principal-in-Charge :: Del Norte County Regional Airport Terminal Obstruction Removal Project | Border Coast Regional Airport Authority | Crescent City, CA :: GHD completed a CEQA IS/MND and NEPA EA, and assisted in completion of the Coastal Grading Permit Application for the first stages of this project for the removal/topping of individual trees or clumps of trees within the airport boundary. GHD completed the 50 percent plans for the project, which encompassed the required mitigation at Bay Meadows. The permitting and design process required close coordination with multiple stakeholders and local, regional, and federal agencies including: the CCC, Friends of Del Norte, the FAA, County of Del Norte, CDFW, and California State Parks.

Principal-in-Charge :: Del Norte County Regional Airport Terminal Replacement Project | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Allen served as Project Principal for the environmental compliance aspects of the terminal replacement project, which includes construction of a new terminal, parking lot, and apron, as well as road improvements and installation of new water and sewer main at the Del Norte County Regional Airport (within the coastal zone). Environmental work entails wetland delineations for the terminal, Runway Safety Area (RSA), and mitigation sites; habitat mapping; botanical and biological surveys; topographic and cultural surveys; a special status plant species management plan; an amphibian mitigation plan; a stormwater pollution prevention plan; land acquisition assistance; SWPPP compliance; onsite biological construction oversight and full construction management; and SWPPP compliance for the offsite wetlands mitigation. In addition, this multi-year project required several EIR Addendums and considerable agency coordination with entities such as the FAA and permits from the CCC, the USACE, the RWQCB, and the CDFW. GHD assisted in obtaining all permits for the project.

Principal-in-Charge :: Del Norte County Regional Airport Runway Safety Area Project | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Allen served as Project Principal for the environmental compliance aspects of the RSA improvements at the Del Norte County Regional Airport. Environmental work for this project included a

wetland delineation, habitat mapping, botanical and biological surveys, topographic and cultural surveys, a special status plant species management plan, a mitigation monitoring plan, a stormwater pollution prevention plan, land acquisition assistance, and a Supplemental EIR. GHD also prepared wetlands mitigation plan specifications for onsite and offsite agency required mitigation. Other services involved full design, construction management, and biological monitoring during construction of the offsite wetlands mitigation, as well as biological monitoring and SWPPP compliance for the onsite RSA mitigation. GHD assisted in obtaining permits from the CCC, the USACE, the RWQCB, and the CDFW. The project is within the coastal zone. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Principal-in-Charge :: Water Storage Tank Hazard Mitigation | Big Rock Community Services District | Hiouchi, CA :: GHD is working with the Big Rock CSD to complete a Hazard Mitigation grant application for submittal to CalEMA and FEMA in order to replace a 1971 tank with a suitably design bolted steel tank and avoid potential catastrophe due to poor seismic conditions. GHD is responsible for all aspects of engineering and permitting.

Project Manager :: Peacock Creek Fish Passage | Del Norte County Department of Public Works, CA :: Responsibilities included initial scoping; grant writing; obtaining funding; coordination with regulatory agencies, California State Parks, and County Department of Public Works; conducting topographic surveys, and hydrologic and hydraulic modelling; designing a new crossing; obtaining all necessary permits; preparing plans and specifications; and conducting construction oversight to remove the old culvert barrier and replace it with an innovative 120-foot-long vortex pool and weir fishway.

Principal-in-Charge :: Eel River Estuary and Centerville Slough Ecosystem Enhancement Project | CalTrout | Humboldt County, CA :: Mr. Allen is overseeing this 1,600-acre ecosystem enhancement project, which will improve geomorphic and ecosystem function in order to enhance

Steve Allen (contd.)

Principal-in-Charge

habitats for native fisheries and aquatic species, support waterfowl and wildlife species, and benefit agricultural land management capacity and uses by decreasing and more effectively managing onsite flooding and sedimentation. GHD prepared portions of the Draft EIR, including the air quality, biological resources, cultural resources, geology and soils, transportation, hazardous materials, and land use sections. GHD also conducted a wetlands delineation, habitat mapping, and sensitive species surveys for this project, as well as permit applications for the RWQCB, the CCC, Humboldt County, State Lands, USACE, and the CDFW.

Principal-in-Charge :: Salt River Ecosystem Habitat Restoration Project | Humboldt County RCD | Ferndale, CA :: Mr. Allen has served as Project Principal and designer for this ongoing project which includes restoration of the lower 7.7 mile reach of the Salt River corridor and 450-acres or tidal salt marsh in the Eel River estuary. Project objectives include removal of salmonid migration barriers, improvements to geomorphic stream function, increased riparian buffers, increased tidal exchange and habitat diversity for avian and aquatic listed species. Responsibilities have included leading the project team through development of permit applications, channel design, EIR support, and development of construction documents for this estimated \$18M restoration project. The project is being funded by the CCC, State Water Resources Control Board, U.S. Department of Fish & Wildlife Service (USFWS), and the CDFW.

Principal-in-Charge :: Martin Slough Tidal Wetland Enhancement Project | City of Eureka, CA :: After GHD evaluated flood prevention alternatives and tidal gate replacement, Mr. Allen has overseen design and permitting for this project intended to restore muted tidal action to an improved stream channel just south of Eureka. GHD completed a wetland delineation and prepared a biological assessment while simultaneously completing final design and bid documents. New muted tide gates have been installed, with construction of upstream phases expected to begin in 2018.

Principal-in-Charge :: Rohner Creek Flood Control, Habitat, and Seismic Improvements Project | City of Fortuna, CA :: Mr. Allen is serving as Project Principal for this ongoing project which includes a 2-Dimensional hydrologic and hydraulic analysis of Rohner Creek and the adjoining floodplain within the City of Fortuna and the subsequent

design of flood reduction alternatives. The objective of the initial study was to analyze the Rohner Creek watershed and identify potential flood reduction improvements to reduce the frequency of flooding events along the Rohner Creek channel within the FEMA flood hazard zone. Involvement included the hydrologic (HEC-HMS) and 2-Dimensional hydraulic modeling (MIKE) of Rohner Creek, a "creek survey", calibration of the hydrologic model to gaged storm events, and development of potential flood reduction alternatives. Flood reduction improvements analyzed included channel widening and terracing with habitat improvements, diversion pipelines, and detention basins.

Principal-in-Charge :: Russian Gulch Instream Habitat Enhancement Plan | The Wildlands Conservancy, CA :: GHD completed an Instream Habitat Enhancement Plan for the Main Stem and East Branch as part of future restoration work in Russian Gulch. This plan includes desktop assessment and reach level diagnostics of the study area; field assessment and data collection; hydrologic analysis; instream enhancement plan report; and agency meetings.

Civil Project Manager :: Bear Gulch Upper Diversion Intake and Fishway Design | California Water Service Company | Woodside, CA :: CalWater retained Michael Love & Associates (MLA) and GHD to evaluate potential design alternatives and develop 30% designs to screen the existing intake at their upper diversion on Bear Gulch, as well as provide adult steelhead passage over the diversion dam. As part of developing the 30% design, the project team developed multiple systems to address the coarse sediment load carried by Bear Gulch, which limited the diversion rate and requires difficult-to-permit in-channel maintenance.

Project Manager :: Cedar Creek Restoration Bridge Project | Pacific Coast Fish, Wildlife, and Wetlands Restoration | Del Norte County, CA :: Mr. Allen was Project Manager and designer for this stream restoration project. The project included initial scoping, grant writing, coordination with local watershed groups, California State Parks, and CDFW, topographic survey, geomorphic evaluation, hydrologic and hydraulic modeling, design of new crossing, obtaining all necessary permits, preparation of plans and specifications to allow for construction within a limited construction window, construction oversight, and post project monitoring. **Winner of the 2007 project of the year award by ASCE.**



Dagan Short, PE

Project Manager



B.S. Environmental Resources Engineering, HSU, 1998



Professional Civil Engineer: CA, OR, WA

Resident Engineer :: **Del Norte County Regional Airport Runway Safety Area Project | Border Coast Regional Airport Authority | Crescent City, CA** :: Mr. Short served as Resident Engineer for the Runway Safety Area (RSA) Project for the Crescent City Airport. Provided assistance in design and permitting for Runway Safety Area improvements. The RSA project resulted in impacts to protected wetlands, special-status plant species, and upland dune mat environmentally sensitive habitat areas (ESHA) which required mitigation actions to offset impacts to these ecosystems. The two-year RSA project consisted of filling, grading, and drainage improvements which will impact an estimated 16.9 acres of palustrine emergent wetlands at the airport. To mitigate the taking of these wetlands, two offsite areas were selected; Pacific Shores Subdivision and a private 82 acre parcel known as Bay Meadows. These sites were used for wetland and ESHA restoration and preservation, and wetland establishment and preservation, respectively. Design aspects of the project for Pacific Shores Subdivision consisted of performing a hydrologic analysis to determine stormwater conveyance characteristics, developing grading and fill plans for the removal and re-construction of dune habitat, and developing construction plans and specifications. Bay Meadows also required grading and fill plans for the establishment of wetlands, design of permanent and temporary access roads, and developing construction plans and specifications. This project required extensive permitting through the USACE, the California Coastal Commission, USFWS, North Coast Regional Water Quality Control Board, and CDFW. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Project Engineer :: **Water Storage Tank Hazard Mitigation | Big Rock Community Services District | Hiouchi, CA** :: GHD is working with the Big Rock CSD to complete a Hazard Mitigation grant application for submittal to CalEMA and FEMA in order to replace a 1971 tank with a suitably design bolted steel tank and avoid potential catastrophe due to poor seismic conditions. GHD is responsible for all aspects of engineering and permitting.

Resident Engineer and Construction Manager :: **Trinidad ASBS Stormwater Project | City of Trinidad, CA** :: The City of Trinidad is located on the Northern California coast. The City was ordered to discontinue its storm water discharge to Trinidad Bay, which was listed as an Area of Special Biological Significance (ASBS). GHD was contracted to evaluate the site, design and develop alternatives, prepare design and bid documents, and perform construction oversight. The project design included the use LID stormwater design with swales, rain gardens, treatment, and infiltration chambers. The design required the development of hydrology, hydraulics, 3-D groundwater, and slope stability models. Mr. Short's roles on this project were modelling support, design engineer, and construction oversight.

Resident Engineer :: **Red Cap Road Widening Project | City of Orleans, CA** :: Mr. Short served as Resident Engineer for the first phase of a road widening project located in Orleans CA. The project involved hard rock excavation, the installation of an MSE wire retaining wall, construction of stormwater controls (e.g., two culverts), and road paving. As resident engineer, he was responsible for construction oversight, quality assurance, and compliance with FHA record keeping procedures.

Resident Engineer :: **Pine Tree Wind Project | PARR Electric | Los Angeles, CA** :: Mr. Short served as Project and Resident Engineer for the design and construction of a 12-mile road leading to a 15-Megawatt wind farm. Design work involved selecting the most appropriate route to the proposed wind farm (soil balance), developing road alignments, grading plans, material staging areas, and sizing of stormwater conveyance structures including 26 culverts and four detention basins. As resident engineer, Mr. Short was responsible for construction oversight and QA.

Engineer of Record :: **Landfill Master Plan | Capital Disposal Landfill | Juneau, AK** :: Mr. Short served as Engineer of Record for the development of a Landfill Master Plan for the Capital Disposal Landfill. The cold weather engineering project included the design of interim stormwater management structures; developing interim grading and drainage plans; Preparing waste fill sequence

Dagan Short (contd.)

Project Manager

and closure sequence plans; preparing a final grading plan; and the development of a Landfill Gas Design Basis Memorandum. The Master Plan was developed to focus on near term improvements and waste fill planning (1 – 5 years) that were intended to improve stormwater quality, mitigate site odors, and improve site aesthetics. The Master Plan was also designed to aid in long term development and closure strategies of the landfill over the next 35 years.

Resident Engineer :: **Stormwater System Improvements | Owens-Brockway Glass Plant | Portland, OR** :: Mr. Short served as Project and Resident Engineer for a \$1.2M stormwater improvement project located on the Columbia Slough Oregon, a highly sensitive environmental zone. He performed a stormwater evaluation of the facility, designed two sediment dropout structures, improved six stormwater outfalls with bioswales, and rerouted over 1,200 feet of storm drain piping.

Engineer of Record :: **Housing Development | Sun Ridge Home Subdivision | Hood River, OR** :: Mr. Short served as Engineer of Record for a proposed 45-house subdivision located in Hood River, OR. Project consisted of developing a stormwater management system and report for the proposed subdivision. Work involved performing pre- and post-development hydraulic modeling and designing over 1,700 feet of pipe on very steep slopes with two detention basins linked in series. In addition, grading plans, construction specifications, and permit documents were developed. Also, Mr. Short negotiated with the City Engineer on the client's behalf to lower stormwater detention requirements, which lowered construction costs.

Resident Engineer :: **Contaminated Sediment Removal Action | Hoy's Marine | Newport, OR** :: Mr. Short served as Project and Resident Engineer responsible for the design and implementation of a contaminated sediment removal action as part of the US EPA's CERCLA program. Contaminants of concern included heavy metals, chlorinated solvents, and PCBs. As resident engineer, he was responsible for construction oversight/quality assurance, and compliance with EPA record keeping procedures.

Project Manager :: **Brownfield Development | Confidential Client | Alameda County, CA** :: Mr. Short served as Project Manager for a \$6.5M brownfield development project located on an abandoned ash monofill. The project involved

the removal of 1.2M cubic yards of contaminated soils, construction of a low-permeability cover liner, stormwater controls, and a pump station. He coordinated all project activities and acted as the client liaison for negotiations with the various regulatory agencies.

Engineer of Record :: **Manchester Fuel Repository Remediation and Stormwater Improvement Project | US Department of Navy | Manchester, WA** :: Mr. Short served as Engineer of Record for a \$4M remediation and stormwater improvement project for a fuel repository located on the Puget Sound in Manchester, Washington. He designed and constructed two air sparge systems and made numerous stormwater improvements, including the installation of four oil/water separators and three sediment dropout structures.

Engineer of Record :: **15-Acre Solid Waste Cell | Casper Landfill | Casper, WY** :: Mr. Short served as Engineer of Record for the design and construction of a 15-acre solid waste cell at the Casper Landfill. The cold weather engineering project consisted of developing the necessary permit documents for the new cell which included: operations plan and design report, engineering drawings, a construction QA/QC plan, a closure and post closure plan, and financial assurance documents.

Resident Engineer :: **Terminal 4, Slip 3 Sparge Remediation System | Port of Portland, OR** :: Mr. Short served as Project and Resident Engineer for a \$1.8M air sparge remediation system for the removal of petroleum (PAHs and BTEX) contaminated groundwater. Activities involved system design related to sizing the liquid ring pump, calculating residence times, layout of equipment, and design of operations and monitoring schedule. As resident engineer, he was responsible for construction oversight/quality assurance, and compliance with EPA record keeping procedures.

Engineer of Record :: **Bear Gulch Upper Diversion Screened Intake and Fishway Design | CalWater | Woodside, CA** :: Mr. Short assisted in evaluating design alternatives and developing bid ready designs to screen the existing intake at the upper diversion on Bear Gulch, as well as provide adult steelhead passage over the diversion dam. The project team developed multiple systems to address the coarse sediment load carried by Bear Gulch, which currently limits the diversion rate and requires difficult-to-permit in-channel maintenance.



Patrick Sullivan, PE

Engineering Support



M.S. Environmental Engineering,
University of Vermont, 1999; B.S.

Environmental Resources Engineering, HSU,
1996



Professional Civil Engineer: CA

Project Manager :: Runway Safety Area Improvements Mitigation | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Sullivan served as project manager for environmental oversight of airport improvements and associated on-site mitigation. Led a team of biologists monitoring construction activities in federal endangered species and coastal dune and wetland habitat over a two-year period. The on-airport work was completed ahead of schedule and within budget in 2015. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Project Engineer / Lead Hydraulic/Hydrology Modeler :: Pacific Shores and Bay Meadows Wetlands Mitigation Project | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Sullivan led hydraulics and hydrology modeling, as well as construction oversight. Mr. Sullivan supported multiple aspects of the BCRAA Wetlands mitigation projects. He performed hydrological analysis, groundwater investigations, and soil moisture studies for both the Pacific Shores and Bay Meadows sites. This information was used in developing the wetland mitigation design that was implemented in 2016. Mr. Sullivan also performed construction oversight and inspection of clearing and excavation during the wetlands implementation phase of the project and hydrological monitoring of site performance post construction.

Project Engineer / Lead Hydraulic/Hydrology Modeler :: Santa Ana River Bypass Settling Basin Design | San Bernardino Valley Municipal Water District | Highland, CA :: Mr. Sullivan served as Project Engineer and lead hydraulics and hydrology modeler for an analysis of a Santa Ana River diversion stilling basin. The analysis included building a combined 1-D and 2-D flow model to assess hydraulic grade elevations, flow velocities, over land flow pathways, and rock slope protection sizing.

Project Engineer / Lead Hydraulic/Hydrology Modeler :: Storm Drain Master Plan | City of San Carlos, CA :: Mr. Sullivan served as Project Engineer and lead hydraulics and hydrology modeler. GHD completed a storm drain master

plan that included developing a stormwater hydrology and runoff analysis. The project entailed compiling historical data, storm monitoring, and collecting extensive field data to develop a 2-D storm water runoff model. The data collection included inventory and assessment of over 80% of the entire City storm drain infrastructure. The model was used to identify capital improvement areas and evaluate improvement alternatives. Mr. Sullivan was the lead modeler on the project and also was responsible for facilitating meetings with the client. Upon completion of the project the City has retained GHD for further analysis of the tidally influenced portions of the system and on-call support for storm drain and engineering services.

Project Engineer / Lead Hydraulic/Hydrology Modeler :: Santa Venetia Storm Drain Master Plan | Marin County, CA :: Mr. Sullivan served as Project Engineer and lead hydraulics and hydrology modeler. GHD completed a stormwater runoff analysis and development of a storm drain master plan. The project entailed compiling historical data and collecting necessary field data to develop a 2-D storm water runoff model. The model was used to identify capital improvement areas and evaluate improvement alternatives. Mr. Sullivan was the lead modeller on the project and also was responsible for facilitating meetings with the client and community outreach. After completion of this project, Mr. Sullivan presented this project with Marin County at American Public Works Association Public Works Conference and Floodplain Management Association Conference.

Project Engineer / Construction Manager :: Trinidad ASBS Stormwater Project | City of Trinidad, CA :: The City of Trinidad is located on the Northern California coast. The City was ordered to discontinue its storm water discharge to Trinidad Bay, which was listed as an Area of Special Biological Significance (ASBS). GHD was contracted to evaluate the site, design and develop alternatives, prepare design and bid documents, and perform construction oversight. During the site investigation stage of the project Mr. Sullivan led the hydrology and hydrogeology studies. Studies included installing 20 groundwater wells, geologic field mapping, geophysical imaging (seismic refraction/reflection and electrical resistance), and geotechnical slope

Patrick Sullivan (contd.)

Engineering Support

stability modeling. The project design included the use LID stormwater design with swales, rain gardens, treatment, and infiltration chambers. The design required the development of hydrology, hydraulics, 3-D groundwater, and slope stability models. Mr. Sullivan roles on this project were lead modeler, design engineer, and construction oversight.

Project Engineer / Construction Manager :: **Ranney Well Lateral Replacement | Humboldt Bay Municipal Water District | Arcata, CA** :: Humboldt Bay Municipal Water District is a water wholesaler, supplying water to seven local municipalities/districts. They produce water from groundwater pumped from the Mad River Basin with 5 Ranney lateral well collectors. The Ranney collector wells are over 50 years old and need to be renovated. This project entailed performing a groundwater study which included: collection and evaluation of existing and historic data, installing soil borings and monitoring wells, seismic refraction geophysical study, 3-D groundwater model, alternative design and analysis, design plans and specifications, construction bidding, and construction oversight.

Project Engineer :: **Eel River Mixing Zone Study | City of Fortuna, CA** :: The City of Fortuna wastewater facility discharges to Strongs Creek, which then discharges to the Eel River within 1,000 feet. This mixing zone analysis was performed assess the compliance with discharge requirements. The study focused on low flow time periods when the discharge from the treatment plant comprises a higher percent of the total flow (natural plus discharge). The mixing zone in the Eel River was analysed using the EPA supported mixing zone model, CORMIX.

Project Engineer :: **Strongs Creek/East Littlefield Wetlands Restoration Project | City of Fortuna, CA** :: The Strongs Creek/East Littlefield Wetlands Wetlands Restoration project resulted from an enforcement action due to unauthorized fill of wetlands. The project site was a former dairy that had been a tile and drained agricultural field for nearly 100 years. Tasks in the project included the creation of new and day lighting historic stream channels, creation of a detention pond tailored for the propagation of the northern red legged frog (a listed species), and the creation and mitigation of wetlands and transitional uplands(buffers). Task on this project included wetlands delineation, soil sampling, vegetation surveys, hydrologic study, hydraulic study, alternatives analysis, restoration plan development, permitting (including

CEQA), construction oversight, performance monitoring, and coordination with regulators and enforcement agencies. Agencies involved included ACOE, USEPA, Regional Water Quality Control Board, Department of Fish and Game, and Department of Justice. The project was constructed in the fall to 2012 and is now in a performance monitoring phase.

Project Engineer :: **Young's Dam Fish Passage Improvement Assessment on the Scott River | Etna, CA** :: Mr. Sullivan served as Project Engineer for this fish passage assessment project which included analyzing, modifications to Young's Dam, a low-head flashboard dam used for an irrigation diversion. The project included developing fish passage flows for the site and evaluating performances of alternatives such boulder weirs, roughened channels, and modifications to the existing pool-and-weir fish ladder. Flow depth, velocity, and energy dissipation factor (EDF) thresholds were used in evaluating fish passage performance of the various alternatives.

Project Manager :: **Ocotillo Windpower Project Hydrology and Hydraulic Study | Imperial County, CA** :: Mr. Sullivan served as Project Manager for this hydrologic and hydraulic study which included the development of a HEC-HMS and HEC-RAS model. A comprehensive ACOE HEC-HMS model was developed to determine flow rates associated with various precipitation recurrence events at various locations within the Project Site. Utilizing the computed flow rates and topographic survey information, a HEC-RAS hydraulic model was developed to determine flooding extents during peak rainfall events. The determined flooding extents were then used to identify suitable locations for wind generators.

Project Engineer :: **Napa Syar Quarry Hydrologic Study | City of Napa, CA** :: Mr. Sullivan served as Project engineer for the Hydrologic Study of the proposed Napa Syar Quarry Expansion Project and corresponding Hydrology Section of the EIR. A comprehensive ACOE HEC-HMS model was developed to determine flow rates associated with various precipitation recurrence events for both existing and proposed expansion conditions. Detention ponds were sized to meet federal, state and local guidelines for mitigation of increased flows due to the expansion of quarry operations. Patrick also assisted in the corresponding Hydrology Section of the EIR for the Napa Syar Quarry Expansion Project.



Nathan Stevens, PE

Engineering Support



B.S. Environmental Resources
Engineering, HSU, 2013



Professional Civil Engineer: CA

Project Engineer :: Downtown Wastewater Development Project | Willow Creek Community Services District | Willow Creek, CA :: The community of Willow Creek is currently unsewered, and all of the residences and businesses rely solely on individual septic systems to provide for their wastewater treatment needs, many of which are decades old, some beginning to fail. Mr. Stevens prepared a Preliminary Engineering Report (PER), as well as a SewerCAD model to assist in the preliminary design of the collection system alternatives, including general pipe locations, sizing, and slopes/depths. He also prepared new CWSRF and USDA Rural Utility Services grant applications to secure funding for the District for final design and construction of the recommended project, which includes a new collection system for the downtown area, horizontal directional drilling through a hillside to the treatment plant site, constructing a community septic tank and recirculating gravel filter treatment system, and a community leach field for disposal.

Project Engineer :: Water and Sanitary Sewer Main Line Master Plan | McKinleyville Community Services District | McKinleyville, CA :: MCSD initiated a master planning process to assess the condition and capacity of their water and sanitary sewer main lines to develop a capital improvement program (CIP) that prioritizes projects and forms the basis for a financial plan. As a part of this master plan effort, Mr. Stevens reviewed previous reports, verified results from previous water/sewer models, and used this information as a basis for generating master plan reports that provided recommendations on priority, timing, and costs for capital improvements to MCSD's water/sewer systems for the planning horizon.

Project Engineer :: Samoa Peninsula Wastewater Project | Peninsula Community Services District | Samoa Peninsula, Humboldt County, CA :: The unincorporated communities of Fairhaven and Finntown on the Samoa Peninsula in Humboldt County are unsewered. Most of the existing individual septic systems are aging and are poorly suited for the sandy soil and high groundwater conditions that exist on the peninsula. Additionally, regulatory agencies are requiring upgrades for the wastewater treatment system at the Town of Samoa on the peninsula to the

north of Fairhaven and Finntown. Mr. Stevens assisted in the development of a preliminary engineering report (PER) that analyzed population trends, regulatory requirements, need for the project, developed alternatives, and provided a recommended project that was the most appropriate solution with considerations given to economics, permitting, environmental benefits, and constructability.

Project Engineer :: Blue Lake/Fieldbrook Mad River Crossing Pipeline Replacement Hazard Mitigation Project | Humboldt Bay Municipal Water District | Humboldt County, CA :: HBMWD's current transmission line that serves residents and industrial properties of the Fieldbrook-Glendale Community Services District and the City of Blue Lake crosses the Mad River on an old railroad trestle that is in serious disrepair and prone to failure in a flood or earthquake event. Mr. Stevens prepared a cost estimate and feasibility report that assessed two alternatives that were taken to the preliminary design level: 1) constructing a new aerial crossing with piers and towers which would support a new pipeline, and 2) horizontal directional drilling (HDD) underneath the Mad River to install a new pipeline. He then performed the design, prepared the plans and specifications, and provided construction management services for the project.

Project Engineer :: NPDES Permit | Humboldt Bay Municipal Water District | Humboldt County, CA :: Mr. Stevens prepared the required permit documents for the District to be covered under this permit.

Project Engineer :: 2016 Pre-Disaster Mitigation and Hazard Mitigation Grants | Humboldt Bay Municipal Water District | Humboldt County, CA :: Mr. Stevens prepared grant applications through the CalOES/FEMA Hazard Mitigation Grant (HMG) program to request grant money for replacement of a surge tower. He also prepared applications through both the CalOES/FEMA Pre-Disaster Mitigation Grant and HMG programs to replace the existing 12-kV switchgear with new switchgear that would be located outside of the dam break inundation zone. Applications for both of these projects were successful in receiving grant funds from FEMA, and he is currently working on the design for these projects.



Brendan Byrd, EIT

Engineering Support



B.S. Environmental Engineering, HSU,
2015



Engineer-in-Training: CA

Project Engineer :: Rowdy Creek Fish Passage Improvement Project | Tolowa Dee-ni' Nation | Del Norte County, CA :: Mr. Byrd has assisted in project engineering design for this project, funded through the CDFW Fisheries Restoration Grant Program (FRGP), develop three feasible alternatives—with one selected as the preferred alternative—to improve fish passage conditions on Rowdy Creek at the Hatchery. GHD tasks included reviewing background information, conducting a topographic survey and structural review, conducting hydrology research, characterizing the geomorphic processes, and developing hydraulic models to assess each alternative. Stakeholder outreach was also a critical component to this project; regulatory agencies, landowners, tribes, watershed and fishing groups, and the Hatchery all have interests.

Project Engineer :: Salt River Ecosystem Restoration Project | Humboldt County RCD | Humboldt County, CA :: Mr. Byrd is serving as Project Engineer for the design and development of restored open channel habitat in Ferndale, California. The goal of the project is to restore hydraulic capacity to the channel to mitigate flooding events while restoring aquatic habitat for fish passage. The project consisted of developing construction documents for the design, which included channel grading, habitat restoration, and civil infrastructure. Work included: developing a finish grade channel and floodplain surface model and construction plans in AutoCAD Civil 3D, developing construction cost estimates and quantities, and updating the project storm water pollution prevention plan.

Project Engineer :: Eel River Estuary Preserve Enhancement Project | California Trout Inc. and The Wildlands Conservancy | Humboldt County, CA :: Mr. Byrd is serving as Project Engineer for the design and development of restored open channel freshwater and tidal habitat. The goal of the project is to restore tidal wetlands to provide habitat and beneficial uses to those visiting or using the slough. At present, the project consists of developing 1-D and 2-D hydraulic models to evaluate existing and proposed tidal conditions and to inform the design of the 30% plans. Mr. Byrd's work has involved developing a finish grade surface model and design plans in AutoCAD Civil 3D and developing

construction cost estimates and quantities.

Project Engineer :: 2015 Urban Water Management Plan | City of Millbrae, CA :: Mr. Byrd served as Project Engineer for the 2015 update of the City's Urban Water Management Plan and Water Shortage Contingency Plan. The Urban Water Management Plan Act was designed to help ensure that all Urban Water Suppliers are engaging in water resources planning, including topics such as water supply, demand, quality, and drought measures. Work included: reviewing the City's existing planning documents, reviewing supply and demand information produced by the City's water supply wholesaler, the San Francisco Public Utilities Commission, and the Bay Area Water Supply and Conservation Agency, completing standard water supply, demand, and conservation reporting tables, and updating City's Urban Water Management Plan and Water Shortage Contingency Plan with current data, and update the plan in concurrence with the states 2015 Urban Water Management Plan guidelines.

Project Engineer :: Gibson Creek Floodplain Modeling | City of Ukiah, CA :: Mr. Byrd served as Project Engineer for the analysis of the 100-year base flood elevations for Gibson Creek. The analysis was based in HEC-RAS, and also included determining the maximum flow capacity of several culverts. Work included: developing the HEC-RAS creek model with updated topographic and physical parameter information, performing steady state floodplain analysis, and summarizing findings in a technical memo.

Project Engineer :: Martin Slough Tidal Wetland Enhancement Project | City of Eureka, CA :: Mr. Byrd served as Project Engineer for the design and development of restored open channel habitat. Design included habitat restoration, and various components of civil infrastructure.

Project Engineer :: Technical Assistance for Economically Disadvantaged Water and Wastewater Providers | North Coast Resource Partnership :: Mr. Byrd was involved in the development of a database of resources to assist small water and wastewater providers with the management and operation of their systems.



Misha Schwarz, PWS, CPSS, CAC, CDPH I/A/M

Planning and Permitting Lead



B.S Natural Resource Planning, HSU,
1985



Professional Wetland Scientist; Certified
Professional Soil Scientist; Cal/OSHA Cert.
Asbestos Consultant; CA Dept. of Public Health
Inspector/Assessor/Monitor

Project Scientist :: Transfer Station | Del Norte County Solid Water Management Authority | Del Norte, CA :: Mr. Schwarz was involved in the siting study for a proposed transfer station and materials recycling facility, conducting hazardous materials survey for some of the sites, as well as the biological investigations and wetlands delineation. Also assisted in the EIR, and in obtaining permits. The project site is in the Coastal Zone which required substantial documentation, particularly revolving around impacts to wetlands.

EIR Project Manager :: Central Coast Transfer Station Project Environmental Impact Report | Mendocino Solid Waste Management Authority | Mendocino County, CA :: Mr. Schwarz leads an ongoing EIR for a new transfer station just east of Fort Bragg, proposed to be constructed on forest lands adjacent to Highway 20. Significant issues associated with the project include forest resources, sensitive pygmy forest, special-status species, surface hydrology, noise, and transportation. GHD also assisted in site layout, design, and flow patterns, which resulted in a more efficient design and less impacts to sensitive pygmy forest and special-status plant species.

Project Manager :: Del Norte County Regional Airport Terminal Replacement Project | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Schwarz served as Project Manager for the terminal replacement project (onsite biological monitoring/SWPPP compliance and offsite all services), which includes construction of a new terminal, parking lot, and apron, as well as road improvements and installation of new water and sewer main at the Del Norte County Regional Airport (within the coastal zone). Work effort also included preparation of a CEQA addendum. Environmental work entails wetland delineations for the terminal, Runway Safety Area (RSA), and mitigation sites; habitat mapping; botanical and biological surveys; topographic and cultural surveys; a special status plant species management plan; an amphibian mitigation plan; a stormwater pollution prevention plan; land acquisition assistance; Stormwater pollution prevention Plan (SWPPP) compliance; onsite biological construction oversight and full construction management; and SWPPP compliance for

the offsite wetlands mitigation. In addition, this multi-year project required several EIR addenda and considerable agency coordination with entities such as the Federal Aviation Administration (FAA) and permits from the California Coastal Commission (CCC), the USACE, the RWQCB, and the California Department of Fish & Wildlife (CDFW). GHD assisted in obtaining all permits for the project.

Project Manager :: Del Norte County Regional Airport Runway Safety Area (RSA) Project | Border Coast Regional Airport Authority | Crescent City, CA :: Mr. Schwarz served as Project Manager for RSA improvements at the Del Norte County Regional Airport, on-site permitting, and off-site mitigation at Bay Meadows and Pacific Shores. GHD prepared a Supplemental EIR for proposed wetlands mitigation at Bay Meadows and other project changes. Environmental work for this project included a wetland delineation, habitat mapping, botanical and biological surveys, topographic and cultural surveys, a special status plant species management plan, a mitigation monitoring plan, a stormwater pollution prevention plan, land acquisition assistance, and a Supplemental EIR. GHD also prepared wetlands mitigation plan specifications for onsite and offsite agency required mitigation. Other services involved full construction management and biological monitoring during construction of the offsite wetlands mitigation, as well as biological monitoring and SWPPP compliance for the RSA project, and onsite mitigation. GHD assisted in obtaining permits from the CCC, the USACE, the RWQCB, and the CDFW. The project is within the coastal zone. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Project Manager :: Del Norte County Regional Airport Environmental Assessment (EA) for Master Plan | Border Coast Regional Airport Authority | Crescent City, CA :: Under the direction of Mr. Schwarz, GHD prepared the Environmental Assessment for the Master Plan of the Del Norte County Regional Airport. This Master Plan was to serve as the critical first step for future improvements at the facility. The County acquired an FAA grant for the

Misha Schwarz (contd.)

Engineering Support

construction of a new terminal building and related site improvements. Initial project tasks included an EA for NEPA compliance, National Historic Preservation Act Section 106 surveys and process, Solution 4(f) DOT Act State Parks, sensitive habitat delineation, extensive wetland delineation and biological surveys, and an investigation of potential UST's and hazardous materials. The wetland delineation and biological surveys part of the project involved the delineation and sensitive species surveys on approximately 100 adjacent acres of forest, brushlands and grasslands. Further biological work included a USACE protocol wetland delineation and wetland reconnaissance of a proposed road access and mitigation area. Additional investigations included a regional wide mitigation site study with conceptual mitigation plan for 60 acres of proposed wetland mitigation.

Project Scientist :: **Martin Slough Tidal Wetland Enhancement Project | City of Eureka, CA** :: Mr. Schwarz served as project scientist for this tidally influenced stream restoration and flood control project which involved completion of a wetlands delineation, a Biological Assessment, and assistance for a CEQA document for new tide gates, levee modifications, tidal channel design, wetlands evaluation and creation, and off channel ponds for peak flow storage and juvenile salmonid rearing habitat, all in the coastal zone.

Project Scientist :: **Eel River Estuary and Centerville Slough Ecosystem Enhancement Project | CalTrout | Humboldt County, CA** :: Mr. Schwarz served as project scientist for this 1,600-acre ecosystem enhancement project, which will improve geomorphic and ecosystem function in order to enhance habitats for native fisheries and aquatic species, support waterfowl and wildlife species, and benefit agricultural land management, capacity, and uses by decreasing and more effectively managing onsite flooding and sedimentation. In addition to design, GHD prepared 12 chapters of the Draft EIR, including the air quality, biological resources, cultural resources, geology and soils, transportation, hazardous materials, and land use chapters (of which Mr. Schwarz reviewed all). . The Coastal Conservancy prepared the remaining chapters, which Mr. Schwarz also reviewed. GHD assembled and circulated the Draft and final EIRs. GHD also conducted a wetlands delineation, habitat mapping, and sensitive species surveys for this project, as well as a Mitigation Monitoring Plan, an Adaptive Management Plan, a Biological Assessment,

an Incidental Take Permit, and permit applications for the RWQCB, the CCC, Humboldt County, State Lands, USACE, and the CDFW. The project is in the coastal zone.

Lead Scientist :: **Salt River Ecosystem Habitat Restoration Project | Humboldt County RCD | Ferndale, CA** ::

Mr. Schwarz's responsibilities have included leading the biological team, conducting wetlands delineations on over 40 agricultural parcels, and a delineation on Riverside Ranch. In addition, he led the team to obtain permits, leases, and agreements from the CCC, the State Water Resources Control Board, the CDFW, the State Land Commission, Humboldt County, and the USACE. Mr. Schwarz assisted with CEQA strategies and necessary CEQA updates in order to keep the project compliant with the EIR and MMRP.

Chapter Reviewer :: **Humboldt Bay Area Regional Spartina Eradication Programmatic EIR | Humboldt County,**

CA :: Mr. Schwarz was chapter reviewer for the Hydrology and Water Quality and Hazards sections of the CEQA PEIR, which analyzed various methods for control and removal of invasive dense-flower cordgrass (*Spartina densiflora*) in the Humboldt Bay region (which encompasses the Eel River and Mad River estuaries). The Hydrology and Water Quality section assessed the tidal marsh geomorphology and water quality impacts associated with removal methods, including burning, smothering, and mechanical and herbicide treatments, while the Hazards chapter analyzed hazards associated with herbicide control of cordgrass.

Project Manager :: **Samoa Deconstruction Project | Simpson Timber Co. | Humboldt Bay, CA** :: GHD obtained permits and performed a hazardous materials survey this demolition project. Specifically, GHD assisted in completion of a CEQA MND and permits from the CCC, USACE, RWQCB, the Harbor District, State Lands, and the County of Humboldt.

IS/MND Project Manager :: **Fuel Oil Pipeline Removal Project | PG&E Humboldt Bay Power Plant | Eureka, CA** :: The CEQA document analyzed the project's impact on special-status species, destruction of eel grass beds, degradation of water quality (contaminated sediments), and air quality impacts. The document was completed on a fast-track schedule and satisfied PG&E, the Humboldt Bay Harbor, Recreation and Conservation District, and the permitting agency.



Kristine Gaspar

Environmental Planner



M.P.A. Public Administration, California State University, Sonoma, 1995; B.A. Environmental Studies and Planning, California State University, Sonoma, 1992

Permitting, CEQA, NEPA Task Lead :: **Bay Trail Project | East Bay Regional Parks District | Oakland, CA ::** Ms.

Gaspar is currently serving as the Permitting Task Lead on obtaining resource agency permits for construction of a segment of the Bay Trail that is being implemented by EBRP. The site has challenges as it is within the 100-year flood, a condition that will worsen with sea level rise. Involved agencies include U.S. Army Corps of Engineers (USACE), San Francisco Regional Water Quality Control Board, National Marine Fisheries Service (NMFS), California Department of Fish & Wildlife (CDFW; Incidental Take Permit), and Bay Conservation and Development Commission.

Permitting Lead :: **Larkspur Extension Permitting | SMART | Marin County, CA ::** Ms.

Gaspar assisted the Sonoma Marin Area Rail Transit with obtaining permits (USACE Nationwide Permit, Regional Water Quality Control Board [RWQCB] Regional Water Quality Certification, and CDFW Streambed Alteration Agreement), preparing the Mitigation Plan for permanent impacts to wetlands, and providing construction support.

Permitting Lead :: **Five-way Roundabout and Culvert Improvements | City of Healdsburg, CA ::** Ms.

Gaspar is serving as Project Planner overseeing the resource agency permitting (USACE, RWQCB, and CDFW), CEQA documentation (within the scope of the Programmatic Document), and construction management support.

Permitting Lead :: **Vallejo Ferry Maintenance Facility Project Initial Study/Mitigated Negative Declaration and Permitting | Water Emergency Transportation Authority (WETA) | Vallejo, CA ::** Ms.

Gaspar oversaw preparation of the Initial Study/MND and was responsible for coordinating and securing the resource agency permitting. The project included the construction of a new docking and maintenance facility within Mare Island Strait. The permitting agencies involved include Bay Conservation Development Commission (Major Permit), USACE (Section 10 Permit and Waiver to build within Federal Channel), San Francisco RWQCB (Water Quality Certification), NMFS (Formal Consultation), CDFW (Streambed Alteration Agreement and Incidental Take Permit), and U.S. Coast Guard (approval to build within Federal

Channel). The project also involved coordination with Navy BRAC.

Permitting Lead :: **Richmond Ferry Terminal | WETA | Richmond, CA ::** Ms.

Gaspar oversaw the resource agency permitting process and supporting technical studies for this new WETA ferry terminal to be located at the terminus of Harbour Way S, in Richmond. Approvals include Dredged Material Management Office (sediment quality sampling plan and disposal plan), USACE (Nationwide Permit), SF RWQCB (401 Certification), and Bay Conservation Development Commission (Administrative Permit).

Permitting Lead :: **Sewer and Water Main Replacement Project | Vallejo Sanitation and Flood Control District | Vallejo, CA ::** The project involves construction and

operation of new and replacement publicly-owned sewer and potable water utilities serving Mare Island. The project features a crossing of Mare Island Strait utilizing trenchless technologies. Ms. Gaspar is responsible for obtaining permits from CDFW and Bay Conservation Development Commission.

Assistant Project Manager :: **Petaluma Ellis Creek Water Recycling Facility and River Access Improvements EIR, Addenda and Permitting | City of Petaluma, CA**

Ms. Gaspar served as Assistant Project Manager for preparation of four EIR Addenda, an individual USACE 404 permit, Section 7 consultation for seven endangered species (California Clapper Rail, California Red-legged Frog, Salt Marsh Harvest Mouse, etc.), SHPO submittal, SF RWQCB 401 Certification, State Lands Commission Lease, CDFW Streambed Alteration Agreement, and BCDC Regionwide 2 permit. An important part of the scope of work included incorporation of EIR Mitigation Measures and resource agency permit requirements into the construction specifications to ensure compliance.

Permitting Lead :: **Payran to Southpoint Non-motorized Trail Permitting | SMART | Sonoma County, CA ::** Ms.

Gaspar is currently assisting SMART with obtaining permits (USACE Nationwide Permit, RWQCB Region Water Quality Certification, and CDFW Streambed Alteration Agreement),

Kristine Gaspar (contd.)

Environmental Planner

and providing support during construction for the Payran to Southpoint section of the proposed non-motorized trail along the rail right-of-way.

CEQA and Caltrans Documentation Task Lead :: **Windsor River Road/Windsor Road Intersection and Bike Path Improvement Project | City of Windsor, CA** :: This Project would improve the functionality of a roadway intersection and construct 800 linear feet of multi-use Class 1. Ms. Gaspar is serving as Project Planner overseeing the CEQA Notice of Exemption and Caltrans Environmental Review Process.

Permitting Lead :: **Forcemain Construction Permitting | Novato Sanitation District | Novato, CA** :: Ms. Gaspar served as Project Planner responsible for preparing a technical memorandum that identified permitting needs of the project that included USACE Section 404 Permit, SF RWQCB Section 401 Water Quality Certification, CDFW Section 1602 Lake and Streambed Alteration Agreement, California State Lands Commission lease application, and encroachment permits from Caltrans, SMART encroachment permits, and PG&E, as well as a number of local permit approvals.

Project Planner :: **East D Street Improvements Permitting Memo | City of Petaluma, CA** :: Ms. Gaspar served as Project Planner responsible for preparing a technical memorandum on the resource permitting requirements for the project which included USACE Section 404 Permit, SF RWQCB Section 401 Water Quality Certification, CDFW Section 1602 Lake and Streambed Alteration Agreement, and California State Lands Commission lease application. The project extended utilities beneath the Petaluma River.

Project Manager :: **Petaluma Water Recycling Expansion Program EIR and Permitting | City of Petaluma, CA** :: The City of Petaluma planned to implement a 1,000-MG per year water recycling program. The City irrigates agricultural lands with secondary water, but desires to use tertiary water in the urban setting to offset potable water use. GHD prepared a Project/Program EIR to allow immediate construction of tanks and trunk lines and provide a flexible vehicle for implementation of the water recycling system over the next 20 years. Project facilities include a storage tank, storage pond, pump station, pipelines, and recycled water irrigation. Permitting with the USACE and Regional Board for the tanks and trunk lines was performed in parallel with the CEQA

document to facilitate the City's schedule.

Project Planner :: **Water Storage Improvement Project EIR | Marin Municipal Water District | Ross, CA** :: Ms. Gaspar served as Task Lead on the agricultural and forestry resources, geology, greenhouse gas emissions, noise, and cumulative analysis for this EIR. The project is for three new storage tanks to be located on the Marin Municipal Water District's Mt. Tamalpais watershed lands.

Deputy PM :: **IRWP Urban Reuse Project | City of Santa Rosa, CA** :: Ms. Gaspar served as Deputy Project Manager for the EIR Addendum. As Santa Rosa completed a feasibility report for a 1,000-MG per year urban reuse project, changes to the Project Description in the IRWP Program EIR were required. A Revised Recycled Water Master Plan and addendum to the Program EIR were prepared, allowing the City to move forward with a revised project under tight scheduling constraints.

Project Planner :: **West College Utilities Facility Permitting | City of Santa Rosa, CA** :: Ms. Gaspar was responsible for the preparation and coordination of USACE nationwide permit and North Coast RWQCB 401 Certification for permanent and temporary fill of wetlands. Improvements to the site included covered parking, stormwater detention basin, and a pump station.

Project Planner :: **On-call Environmental Services | City of San Jose, CA** :: GHD has an On-Call Services contract with the City of San Jose Public Works to perform a variety of engineering and environmental tasks for park and trail projects. Ms. Gaspar serves as the environmental task lead, and is currently assisting with the permitting and supporting studies for multiple projects along Thompson Creek, Coyote Creek, and Guadalupe Park. The sites are subject to the Santa Clara Valley Habitat Plan and many require coordination with the Santa Clara Valley Water Authority.



Scott Harris, CAC, CDPH I/A/M

Permitting Specialist



B.S. Environmental Science, HSU, 2006;
M.B.A. HSU, 2015



Cal/OSHA Cert. Asbestos Consultant; CA
Dept. of Public Health Lead Inspector/
Assessor/Monitor

Environmental Scientist :: **Del Norte County Regional Airport Obstruction Removal Project | Border Coast Regional Airport Authority | Crescent City, CA** :: Mr. Harris assisted BCRAA with State and federal permitting and CEQA compliance tasks associated with initial stages.

Environmental Scientist :: **Del Norte County Regional Airport Runway Safety Area (RSA) Project | Border Coast Regional Airport Authority | Crescent City, CA** :: Mr. Harris assisted BCRAA with State and federal permitting compliance tasks associated with the RSA project. The project was conducted within the Coastal Zone in conjunction with numerous regulatory agency partners. Mr. Harris also assisted with the CEQA compliance aspects of the RSA project, including content production and agency coordination. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Environmental Scientist :: **Del Norte County Regional Airport Terminal Replacement Project | Border Coast Regional Airport Authority | Crescent City, CA** :: Mr. Harris assisted BCRAA with State and federal permitting compliance tasks, as well as industrial hygiene assessment and reporting, associated with the Terminal Replacement project. The project was conducted within the Coastal Zone in conjunction with numerous regulatory agency partners.

Permitting Specialist :: **Salt River Ecosystem Restoration Project | Humboldt County RCD | Humboldt County, CA** :: This ongoing project intends to restore the lower 7.7-mile reach of the Salt River corridor and 450-acres of tidal salt marsh in the Eel River estuary. Project objectives involve removal of salmonid migration barriers, improvements to geomorphic stream function, increased riparian buffers, increased tidal exchange, flood control, and habitat diversity for avian and aquatic listed species. Mr. Harris's responsibilities included obtaining permits, leases, and agreements from the CCC, the State Water Resources Control Board, the Californian Department of Fish & Game, the State Land Commission, Humboldt County, and the USACE.

Permitting Specialist :: **Humboldt Road Safety Improvement Project | Elk Valley Rancheria | Crescent City, CA** :: Mr. Harris coordinated, produced, and delivered environmental compliance permit packages for the project, including the following permit packages: USACE Section 404, USEPA PCN, RWQCB 401, and CDFW 1600.

Permitting Specialist :: **Chevron Terminal Ancillary Structure Demolition Project | Chevron | Eureka, CA** :: Mr. Harris coordinated, produced, and delivered environmental compliance permit packages for the structure demolition project conducted contiguous to Humboldt Bay and located within the Coastal Zone.

Environmental Scientist :: **Electric Vehicle Siting Study | Siskiyou Economic Development Council | Siskiyou, Shasta, and Tehama Counties, CA** :: Mr. Harris conducted an extensive electric vehicle (EV) siting study research and fieldwork in conjunction with the Schatz Energy Research Center. He performed a field siting study throughout the North State, drawing on research of Transportation Analysis Zones (TAZs) and site usage to develop recommendations for the most appropriate placement of Level 2 and 3 EV charging stations.

Project Manager :: **Eureka Dock Piling Replacement Project | Sierra Pacific Industries | Eureka, CA** :: Mr. Harris managed multiple disciplines under an aggressive timeline to successfully complete a diversity of tasks, including CEQA documentation, biological assessments, agency concurrences, eelgrass studies, Coastal Development Permit, USACE 404 permit, NCRWQCB 401 Permit, NESHAP demolition report, and biological construction monitoring services.

Project Manager :: **Broadway Commercial Property Redevelopment Project | Carrington Company | Eureka, CA** :: Mr. Harris managed multiple disciplines under an aggressive timeline to produce civil design plans, transportation impacts analysis, geotechnical study, CEQA documentation, Coastal Development Permit, Conditional Use Permit, and NESHAP demolition report.



Julia Clark

GIS Designer



B.S. Geospatial Sciences, Humboldt State University, 2015

GIS Analyst :: Del Norte County Regional Airport Obstruction Removal Environmental Assessment | Border Coast Regional Airport Authority | Crescent City, CA :: This project removes tree obstructions to meet FAA airport approach and take-off regulations. Obstruction removal included actual removal, trimming, and laying trees down within the airports airspace. Ms. Clark's GIS effort supported field surveys of sensitive plants, ESHA, and tree habitats. She performed spatial analysis on the field findings producing supporting figures for CEQA and NEPA.

GIS Analyst :: Dune Vulnerability and Adaptation Study | Friends of the Dunes | Humboldt County, CA :: Ms. Clark conducted shoreline analysis for a portion of the coast of Humboldt County. She georectified historic aerial imagery, generated shoreline features, and analyzed the extent of shoreline change for this dune vulnerability assessment.

GIS Analyst :: Climate Hazard Adaptation Study | City of Eureka, CA :: Ms. Clark assisted in the preparation of a grant submittal for the City of Eureka regarding Climate Hazard Adaptation, providing data management and cartographic storytelling.

GIS Analyst :: Salt River Ecosystem Restoration Project | Humboldt County Resource Conservation District | Humboldt, CA :: Ms. Clark provided GIS analysis for the Salt River Ecosystem Restoration Project, producing supporting figures for landowner outreach meetings, design plans, and property owner analysis.

GIS Analyst :: Agricultural Regulatory Compliance | Multiple Clients | Humboldt County, CA :: Ms. Clark provided GIS analysis for agricultural regulatory compliance projects in Humboldt County, performing remote sensing analysis, extensive data management, mobile data collection management, and cartographic map design.

GIS Analyst and Environmental Scientist :: Eureka Stormwater Resource Plan | Humboldt Community Services District and City of Eureka | Eureka, CA :: Ms. Clark conducted smoke-testing of sewer networks to identify potential leaks in connections to residential units.

She also performed data acquisition and evaluation; multi-criteria analyses to identify optimal locations for projects; and collection of field data for stormwater resource locations using a sub-meter GPS receiver and ArcGIS Collector.

GIS Analyst :: Low Impact Development and Stormwater Outfall Improvement | Tolowa Dee-ni' Nation, CA :: Ms. Clark provided GIS analysis for a grant proposal for conducting low impact development (LID) for the Tolowa Dee-ni' Nation. Responsibilities included performing data management and map design.

GIS Analyst :: Low Impact Development Planning and Construction | City of Trinidad, CA :: Ms. Clark provided GIS analysis for a grant proposal for conducting LID for the City of Trinidad. Responsibilities included performing data management and map design.

GIS Analyst :: Local Assistance Geodatabase | California Department of Transportation (Caltrans) | Eureka, CA :: Ms. Clark developed and implemented the framework of a new GIS system for Caltrans District 1 Local Assistance projects. Her responsibilities entailed determining data needed for the proposed uses, writing Python scripts for automatic updates, improving data management to prevent future issues, and training staff in the use of interactive web maps.

GIS Instructor :: North Coast Regional Land Trust | Arcata, CA :: Ms. Clark trained non-profit staff by honing their GIS skills beyond basic mapping, and counselled on both data management and map design.

GIS Analyst :: Eel River Estuary and Centerville Slough Enhancement Project | The Wildlands Conservancy, CA :: Julia analyzed habitat change, conducted agricultural impacts analysis, and generated cartographic products for an environmental restoration project on the Eel River.



Ken Mierzwa

Biology / Botany / ESA Lead



B.A. Management, Northeastern Illinois University (NIU), 1979; Graduate Stud. (Ecology and Systematics), NEIU and University of Illinois at Chicago, 1991-1992



California Rapid Assessment Method (CRAM); Endangered Species Policy and Law; WildCAT Construction Awareness Training, Western Section, The Wildlife Society

Biology Team Leader :: **Runway Safety Area Improvements Off-site Mitigation | Border Coast Regional Airport Authority | Crescent City, CA** :: Mr. Mierzwa was responsible for preparation of a 404 permit application and Mitigation and Monitoring Plan as well as Section 7 consultation under the Endangered Species Act. He provided significant input during conceptual and final design of off-site mitigation areas at Pacific Shores and Bay Meadows. He also led negotiations with USACE and USFWS, contributing to discussions with other agencies and stakeholders, and led biological monitors during construction in 2015 and 2016, coordinating with construction managers and contractors. Ultimately, 90 acres of land was acquired and 11 acres of wetland and dune habitat re-established in endangered species habitat at Pacific Shores, with another 16 acres of wetlands established at Bay Meadows. **Winner of the ASCE North Coast Environmental Project of the Year award in 2017 and the ASCE San Francisco Section Airport/Ports Project of the Year in 2017.**

Biology Lead :: **Bird Box Movie Permits | River Bend Productions | Hiouchi, CA** :: Mr. Mierzwa obtained fast-track permits to allow filming of the Netflix movie *Bird Box*, starring Sandra Bullock, including placement of props in the Wild and Scenic Smith River. Coordinated with production staff and agencies and obtained 404, 401, 1602 permits, USFS, and NPS film permits, completed Section 7 consultation with NMFS and USFWS, and completed a CEQA MND, all in 56 days (with public comments). This work allowed production to occur on schedule and brought over \$1M of direct economic benefits to Del Norte County, sharing maintenance and other functions to reduce cost. Construction required two years, with monitoring continuing for an additional five years post-project.

Biology Team Leader :: **Martin Slough Tidal Wetland Enhancement Project | City of Eureka, CA** :: After GHD evaluated flood prevention alternatives and tidal gate replacement, Mr. Mierzwa has been involved in many aspects of design and permitting for this project intended to restore muted tidal action to an improved stream channel just south of Eureka. GHD completed a wetland delineation and prepared a biological assessment while simultaneously

completing final design and bid documents. New muted tide gates have been installed, with construction of upstream phases expected to begin in 2018.

Project Manager and TAC Member :: **Salt River Ecosystem Habitat Restoration Project | Humboldt County RCD | Ferndale, CA** :: Mr. Mierzwa managed avian and amphibian surveys prior to phase 1 construction on a 400-acre restoration site. He also served as a Technical Advisory Committee (TAC) member during conceptual design and consensus building among 40+ stakeholders and landowners. Re-establishment of a 400 acre salt marsh is complete and construction for the seven mile upstream riparian restoration effort is underway. Mr. Mierzwa was also member of the Salt River Watershed Council, charged with long-term post-construction monitoring and management.

Lead Project Scientist :: **Eel River Estuary and Centerville Slough Ecosystem Enhancement Project | CalTrout | Humboldt County, CA** :: Mr. Mierzwa has led studies and field work for over \$1M in grant funded design and permitting fees for baseline ecology studies, wetland delineation, rare plant studies, restoration design, and permitting for an 1,100-acre site at the mouth of the Eel River. The goals of the project include restoration of tidal prism and re-establishment of brackish wetlands to benefit salmonids, tidewater goby, and several other rare or listed species.

Project Manager :: **Various Stream and Drainage Rehabilitation Projects | Alameda County Flood Control District | Alameda County, CA** :: Mr. Mierzwa led biological monitoring efforts on four concurrent projects in Fremont, Castro Valley, Pleasanton, and Livermore. Efforts included pre-construction surveys, permit compliance, and biological monitoring during construction. Federally threatened California Red-legged Frogs were located on one of the projects and were relocated under the terms of a biological opinion and after discussion with USFWS. The field team included five GHD biologists from two offices, all pre-approved by USFWS and CDFW.

Project Manager :: **Upper Penitencia Creek / Alum Rock Park Fish Passage Improvements | Santa Clara Valley**

Ken Mierzwa (contd.)

Biology / Botany / ESA Lead

Transportation Agency, CA :: Mr. Mierzwa prepared design and permit documents for restoration activities; the design required careful balancing of sometimes conflicting objectives, because the park includes a high concentration of cultural resources and has heavy public use in addition to providing habitat for sensitive species. **Winner of the ASCE Region 9 Environmental Project of the Year award in 2013.**

Project Scientist :: **Habitat Restoration Program | San Francisco Public Utilities Commission | San Mateo County, CA** :: Mr. Mierzwa prepared mitigation and monitoring plans, participated in agency coordination, and assisted with permitting and final design for seven restoration projects on San Francisco Public Utilities Commission watershed lands. The individual projects ranged from four to 66 acres, and included restoration of serpentine grassland, valley needlegrass grassland, seasonal and semi-permanent wetlands, oak woodland, and riparian woodland. A key goal of the projects was to restore habitat for a variety of listed and sensitive species including the California Red-legged Frog, San Francisco Garter Snake, Mission Blue Butterfly, Bay Checkerspot Butterfly, San Francisco Dusky-footed Woodrat, and Fountain Thistle.

Project Manager :: **Salt Marsh Restoration | City of San Rafael, CA** :: Mr. Mierzwa completed permitting and mitigation design for tidal marsh restoration along Mahon Creek near downtown San Rafael. Incorporating a trail system, the project is now part of a vibrant new urban neighborhood.

Project Scientist :: **Vallejo Ferry Maintenance Facility Project Initial Study/Mitigated Negative Declaration and Permitting | Water Emergency Transportation Authority (WETA) | Vallejo, CA** :: Mr. Mierzwa aided in preparing the Initial Study/MND and was responsible for coordinating and securing resource agency permitting. The project included the construction of a new docking and maintenance facility within Mare Island Strait. Permitting agencies involved were the Bay Conservation Development Commission (Major Permit), USACE (Section 10 Permit and Waiver to build within Federal Channel), San Francisco RWQCB, NMFS (Formal Consultation), CDFG (Streambed Alteration Agreement and Incidental Take Permit), and US Coast Guard (approval to build within Federal Channel).

Project Scientist :: **Humboldt Bay Trail | Humboldt County Department of Public Works | City of Eureka, CA** :: GHD was selected to conduct a series of technical studies between Eureka Slough and Bracut Industrial Park on US 101 to determine the feasibility, costs, and constraints of developing a multi-use trail. The project study area encompasses Caltrans facilities, including the south-bound shoulder, clear recovery zone, and edge of right-of-way along US 101. GHD conducted a thorough data collection process within the study area to determine all physical constraints to developing the project.

Construction Lead :: **Construction Permitting Guidance | Caltrans | Oakland CA** :: Mr. Mierzwa visited several highway improvement projects and then prepared guidance manuals to assist Caltrans resident engineers in navigating permit conditions and environmental monitoring related to streams and wetlands.

Project Scientist :: **Fields Landing Boat Launch Facility | Humboldt County, CA** :: GHD prepared a Biological Assessment (BA) following NOAA Fisheries guidance for a new boat launch facility. The document addresses potential impacts to Green Sturgeon, salmonids, and other aquatic species in the context of Section 7 of the Endangered Species Act. Noise impacts from pile driving were addressed in the BA. An Alternatives Analysis and Eelgrass mitigation plan were also developed for the project. Eelgrass mitigation will consist of removal of adjacent debris within existing eelgrass beds to account for impacts at the toe of the existing ramp. Coordination with the Coastal Commission and the USACE, as well as NOAA Fisheries, has been vital to this project.

Construction Lead :: **Hine's Emerald Dragonfly Monitoring | Private Sector Client | near Chicago, IL** :: Mr. Mierzwa prepared a comprehensive long-term monitoring protocol for federally endangered Hine's Emerald Dragonfly populations, using distance sampling. He trained and led field teams during 20 years of adult and larval monitoring under federal and state permits. This effort culminated in preparation of a Habitat Conservation Plan for proposed future mining activities.

Project Manager :: **Biological Evaluation | Karuk Tribe | Happy Camp, CA** :: Mr. Mierzwa completed a site visit and biological evaluation to support an EA prepared by the tribe.



Genevieve Rozhon

Biologist



M.S. Natural Resources – Wildlife,
Humboldt State University, 2017;
B.S. Wildlife, Fish, and Conservation Biology,
University of California, Davis, 2009



40-hour HAZWOPER Certification; NEPA
Essentials Workshop – Association of
Environmental Professionals, 2016

Biologist :: Del Norte County Regional Airport Runway Safety Area Project (On-Site, Pacific Shores, and Bay Meadows Wetland Mitigation) | Border Coast Regional Airport Authority | Crescent City, CA :: Ms. Rozhon conducted avian surveys for congressionally mandated runway improvements and security fence upgrades at Crescent City Airport. She established buffers for raptors and other species in compliance with permit conditions, coordinated frequently with the client, construction manager, and contractors to avoid impacts to protected species while facilitating efficient construction workflow, and mapped and reported results on a weekly basis. Additionally, she assisted with short-leaved evax monitoring (CA rare plant) and dune plant vegetation plots. She also conducted avian surveys for Crescent City Airport mitigation sites to avoid impacts to protected species such as the Federally Threatened Oregon silverspot butterfly, while facilitating efficient construction workflow. She offered input on placement of wildlife snags at project site, conducted Northern Red-legged Frog surveys, and oversaw daily construction activities while serving as a biological monitor. **Winner of the ASCE North Coast Environmental Project of the Year award and the ASCE SF Sec. Airport/Ports Project of the Year in 2017.**

Wildlife Biologist :: Bird Box Movie Permits | River Bend Productions | Hiouchi, CA :: Ms. Rozhon co-authored the project's Biological Assessment, 404 permit application, 401 permit application, and CDFW 1600 permit application, providing assessments regarding the impacts of movie filming in the Smith River to the federally endangered and threatened Northern Spotted Owl, Marbled Murrelet, and Coho Salmon. She assisted with the creation of mitigation measures to avoid impacts to these species. She also reviewed and edited the CEQA ISND for this project.

Wildlife Biologist :: Eel River Estuary Preserve Enhancement Project | California Trout Inc. and The Wildlands Conservancy | Humboldt County, CA :: Ms. Rozhon was co-author of the project's EIR biology section (avian-related topics) and Draft Biological Assessment. She provided assessments regarding tidal prism restoration efforts to state endangered, threatened, or species of special concern including the Western Snowy Plover, Western

Yellow-billed Cuckoo, Short-eared Owl, Northern Harrier, Bank Swallow, and Yellow Warbler. She estimated potential species take as a result of the project via spatial analysis in ArcGIS.

Biologist / GIS Analyst :: Hine's Emerald Dragonfly Monitoring | Hanson Material Service | Romeoville, IL :: Ms. Rozhon prepared GIS maps to document known and hypothesized dispersal routes for a federally endangered dragonfly. The maps were included in a Habitat Conservation Plan and also served as a basis for ongoing field monitoring. She also compiled, digitized, and mapped dragonfly behavioral data from 2006 to present for the USFWS.

Wildlife Biologist :: Willow Run Airport Wildlife Hazard Memorandum | Willow Run Airport | Ypsilanti, MI :: Ms. Rozhon was co-author of the project's Wildlife Hazard Memorandum biology section (avian-related topics). She provided assessment regarding the project's likelihood to attract and impact variety of avian species at the airport.

Wildlife Biologist :: Surge Tower Retrofit | Humboldt Bay Municipal Water District | Arcata, CA :: Ms. Rozhon was co-author of the project's supporting environmental documents (wildlife-related topics). Provided assessment regarding the project's likelihood to impact variety of wildlife species at a surge tower and industrial water line retrofit site. Species addressed in the report include the Northern Red-legged Frog (CDFW Species of Special Concern), White-tailed Kite (CDFW Fully Protected Species), and several other bird species protected under the Migratory Bird Treaty Act.

Biologist :: Eureka Waterfront Trail | City of Eureka, CA :: Ms. Rozhon conducted wildlife surveys (nesting bird and Northern Red-legged Frog) in advance of new trail construction, establishing buffers for avian species in compliance with permit conditions. She also coordinated with the project manager, contractor, and State agency personnel to avoid impacts to protected species while facilitating efficient construction workflow, and conducted contractor environmental awareness trainings prior to the start of work. She mapped and reported results and presented GIS maps to the client and CDFW. In addition, she assisted with rare

Genevieve Rozhon (contd.)

Biologist

plant surveys along the trail (Humboldt Bay Owl's Clover).

Wildlife Biologist :: **Wastewater System Energy Efficiency and Renewable Energy Project | McKinleyville Community Services District (MCSD) | McKinleyville, CA** :: Ms. Rozhon was co-author of the project's supporting environmental documents (wildlife-related topics). She provided assessment regarding the project's likelihood to attract and impact variety of wildlife species at several pump stations and at a proposed solar site.

Wildlife Biologist :: **Blue Lake Fieldbrook-Glendale Community Services District Water Transmission Pipeline Replacement Project | Humboldt Bay Municipal Water District | Arcata, CA** :: Ms. Rozhon was co-author of the project's supporting environmental documents (wildlife-related topics). She provided assessment regarding the project's likelihood to impact variety of wildlife species at a water transmission line replacement site. This required a field evaluation and nesting bird survey. Species addressed in the report include the Northern Red-legged Frog (CDFW Species of Special Concern), Foothill Yellow-legged Frog (CESA Candidate), and several bird species protected under the Migratory Bird Treaty Act.

Ornithologist :: **Rohner Creek Flood Control Project | City of Fortuna, CA** :: Ms. Rozhon performed avian surveys for planned improvements in and along Rohner Creek in Fortuna. This required monitoring, documenting, and reporting bird breeding activity, as well as establishing buffers for avian species in compliance with permit conditions. Ms. Rozhon coordinated frequently with the construction manager, contractors, and state agencies to avoid impacts to protected species while facilitating efficient construction workflow.

Biologist :: **Red Cap Road Improvements | Karuk Tribe | Orleans, CA** :: Ms. Rozhon performed avian clearance surveys for planned road improvements for the Karuk Tribe. Coordinated with the Tribe and Humboldt County. This required monitoring, documenting, mapping, and reporting bird breeding activity.

Wildlife Biologist :: **Martin Slough Enhancement Project | Redwood Community Action Agency | Eureka, CA** :: Ms. Rozhon was the primary author of the project's Safe Harbor Agreement (SHA). She provided assessments regarding

the project's impacts to State threatened Coho Salmon and coordinated with client and State agencies to ensure SHA approval.

Wildlife Biologist :: **Mines Road Rehabilitation Project | Alameda County Public Works | Pleasanton, CA** :: Ms. Rozhon was a USFWS-approved Biologist under the Programmatic Biological Opinion for the East Alameda County Conservation Strategy. The Mines Road Bridge project included repairs to an undermined bridge abutment within Arroyo Mocho Creek 14 miles southeast of Livermore. Activities included pre-construction surveys, report writing, and providing biological monitoring and relocation of species during construction. (Species: California Tiger Salamander, California Red-legged Frog, Foothill Yellow-legged Frog, Alameda Whipsnake, and San Joaquin Kit Fox.)

Wildlife Biologist :: **Eureka Dock Piling Replacement Project | Sierra Pacific Industries | Eureka, CA** :: Ms. Rozhon served as the primary author of the project's Biological Assessment (BA) and lead author of the project's Incidental Take Permit (ITP). She provided assessments regarding the impacts of dock piling replacement in Humboldt Bay to federally endangered and threatened species such as the Marbled Murrelet, Green Sturgeon, Pacific Eulachon, Coho Salmon, Steelhead, and Chinook salmon.

Revegetation QA Specialist :: **Holden Mine Remedial Action | Rio Tinto | Chelan, WA** :: Ms. Rozhon oversaw the revegetation of 40,000 conifers on a copper mine remediation site (CERCLA) in the Okanogan-Wenatchee National Forest. She ensured that planting contractors met the agreed upon contract specifications and communicated with the client regarding QA results and informed them of areas needing improvement. Quality assurance duties included: monitoring proper tree care and field handling, performing random informal sampling of actual planting and identifying problems, and observing contractor's inspection process for accuracy. Measurements collected included: total number of trees by species in each revegetation area, total number of trees planted satisfactorily, total number of trees planted unsatisfactorily (inadequate spacing, inappropriate mulch, planted to an inadequate depth), total number of plantable spots, total number of microsites, and number of microsites not planted). In addition, conifer stock was checked prior to planting.



Amy Livingston

Botanist



M.S. Natural Resources – Forestry, Humboldt State University (HSU), 2014; Post-Baccalaureate Coursework: Botany (32 units), Natural Resource Planning (15 units), Humboldt State University, 2005; B.S. English and Environmental Studies, Iowa State University, 1999

Botanist :: Del Norte County Regional Airport Runway Safety Area Project (On-Site, Pacific Shores, and Bay Meadows Wetland Mitigation) | Border Coast Regional Airport Authority | Crescent City, CA :: Ms. Livingston monitored on-site mitigation areas compensating for impacts resulting from runway expansion at the Crescent City airport. On-site mitigations included 3.9 acres of re-establishing wetland, a vegetation enhancement area for the federally endangered western lily, a plant replacement site for the state listed short-leaved evax, re-establishing Environmentally Sensitive Habitats including coastal prairie and wetland habitat. She co-authored monitoring reports for mitigations in 2016. This year, Ms. Livingston has monitored off-site mitigation areas at the Pacific Shores subdivision and at Bay Meadows. Off-site mitigations included 16 acres of wetland establishment at Bay Meadows and approximately 9 acres of wetland re-establishment at Pacific Shores subdivision. She coordinated field efforts of three botanists at both project locations. At Bay Meadows, she monitored revegetation, which included hydro seeding and planting of 74,000 container plants, as well as documenting daily work flow and discussing relevant resource issues and concerns with resident engineer, construction manager, and subcontractors. **Winner of the ASCE North Coast Environmental Project of the Year award and the ASCE SF Sec. Airport/Ports Project of the Year in 2017.**

Botanist :: Stormwater Outfall Improvement Project | Tolowa Dee-ni' Nation | Smith River, CA :: Ms. Livingston performed a wetland delineation as part of a two-person field team for a small project site and assessed the site for Environmentally Sensitive Habitat Areas and for special status plant habitat. She co-authored technical memorandum on survey results with wildlife biologist.

Botanist :: Trinity County Resource Conservation District | Weaverville, CA :: From 2014-2016, Ms. Livingston performed rare and sensitive plant surveys and wrote botanical reports to meet requirements of CEQA or NEPA for partners including Five Counties Salmonid Conservation Program, and the Trinity Collaborative, for projects on the Shasta Trinity National Forest National Recreation Management Unit. She completed botanical surveys and

reports, and assisted with botanical aspects of wetland delineations, as a subcontractor to the Northwind Group for the Trinity River Restoration Program.

Botanist :: Wastewater System Energy Efficiency and Renewable Energy Project | McKinleyville Community Services District (MCSD) | McKinleyville, CA :: Ms. Livingston was co-author of the project's supporting environmental documents (vegetation-related topics in 2017), providing assessments regarding the project's likelihood to impact sensitive plants, wetlands, or ESHA at a pump station and proposed solar site.

Botanist :: Covelo SR 162 Corridor Multi-Purpose Trail Wetland Delineation | Mendocino Council of Governments | Covelo, CA :: Ms. Livingston performed a wetland delineation as part of a two-person field team, for approximately two miles of proposed trail and reconnaissance level wetland mapping for a section of proposed trail Alternative 2.

Botanist :: Eel River Estuary Preserve Enhancement Project | California Trout Inc. and The Wildlands Conservancy | Humboldt County, CA :: Ms. Livingston was co-author of the Habitat MMP chapter within the Eel River Estuary Preserve Project Management Plan.

Botanist :: Humboldt Bay Trail South Wetland Delineation | County of Humboldt Department of Public Works | Eureka, CA :: Ms. Livingston performed a wetland delineation for an approximately four-mile-long section of proposed trail as part of a two-person field team and authored the wetland delineation report. She mapped vegetation communities, co-authoring the draft report.

Botanist :: Glendale Community Services District Pipeline Mad River Crossing | Humboldt Bay Municipal Water District | Blue Lake, CA :: Ms. Livingston performed field work including pre-construction plant surveys and surveys for special-status species and habitats. She co-authored an amendment to Biological Evaluation and Wetland Study.



Joslyn Curtis

Botanist



B.S. Botany (Minor Horticulture Science & Anthropology), North Carolina State University, 2009

Ecologist :: Pillar Point Harbor West Trail Repair | San Mateo County Harbor District | Half Moon Bay, CA ::

Ms. Curtis performed a biological survey and habitat map assessment of the project area. She authored a biological resource report and biological assessment.

Ecologist :: Coyote Creek Non-native Plant Mapping | City of San Jose, CA :: Ms. Curtis mapped non-native species and creek blockages on city parcels along Coyote Creek.

Ecologist :: Monument Peak Road Improvements | Santa Clara County Parks and Recreation Department | Milpitas, CA :: Ms. Curtis delineated wetlands, and performed a biological survey and habitat map assessment of the project area. She authored a biological resource and wetland delineation report.

Ecologist :: 2018 Rail to Trail Project | City of Ukiah, CA :: Ms. Curtis surveyed performed a tree and biological resource survey of the project area. She is authored a biological resource report for the City.

Ecologist :: FEMA Hazard Mitigation Grant Application | North Marin Water District | Dillon Beach, CA :: Ms. Curtis performed vegetation map surveys for all public lands in Sonoma County. These surveys included full species lists, landscape context, and soil texture analysis.

Ecologist :: Rare Natural Community Map Development | CA Native Plant Society (CNPS) | Sacramento, CA :: Ms. Curtis compiled Geographical Information layers to inform the development of a Rare Natural Communities Map for the San Joaquin Valley to be developed by CNPS.

Vegetation Ecologist :: GIS Vegetation Mapping of Panoche BLM District | CNPS | San Benito/Fresno County, CA :: Ms. Curtis performed vegetation map surveys and mapped 20,000 acres of public lands.

Vegetation Ecologist :: Southern Sierra Nevada Foothills Vegetation Map Surveying | CNPS | Mariposa to Grapevine, CA :: Ms. Curtis performed vegetation map surveys across diverse habitats in this ecoregion. These

surveys included full species lists, landscape context, and soil texture analysis.

Vegetation Ecologist :: Desert Renewable Energy Conservation Plan (DRECP) Vegetation Map Accuracy Assessment | CNPS | Mojave and Colorado Plateau Deserts, CA :: Ms. Curtis performed vegetation map accuracy assessment on close to 9 million acres of public lands within the DRECP boundaries. These surveys included a dominant species lists and landscape context information.

Ecologist :: Carrizo Plain NM Vegetation Community Surveys | CDFW - VegCAMP | San Benito/Fresno County, CA :: Ms. Curtis performed vegetation community surveys. These surveys included full species lists, landscape context, and soil texture analysis.

Botanist :: Vegetation Map Surveying | CDFW - VegCAMP | Sonoma County, CA :: Ms. Curtis performed vegetation map surveys for all public lands in Sonoma County. These surveys included full species lists, landscape context, and soil texture analysis.

Vegetation Ecologist :: Central Valley Riparian Vegetation Map Accuracy Assessment | CDFW - VegCAMP | Sacramento, CA :: Ms. Curtis surveyed riparian vegetation communities across the central valley. These surveys included full species lists, landscape context, and soil texture analysis.

Botanist :: Tahoe National Forest GIS Historic Project Database | National Forest Service | Nevada City, CA :: Ms. Curtis created a geodatabase cataloging all botanically surveyed areas within the Tahoe National Forest.

Botanist :: GIS Vegetation Mapping of Big Cone Douglas Fir | CNPS | Angeles National Forest, CA :: Ms. Curtis performed *Pseudotsuga macrocarpa* woodland surveys on more than 655,000 acres of the Angeles National Forest (NF). These surveys included full species lists, landscape context, and soil texture analysis. The information her team collected was then used to inform her delineation of all big cone Douglas fir woodlands in the NF.



Jessica Hall, PLA

Landscape Architect



M.A. Landscape Architecture, California State Polytechnic University at Pomona, 2001; B.A. Architecture, Princeton University, 1992



Professional Landscape Architect: CA

Environmental Planner :: Habitat Mitigation and Monitoring Plans | Border Coast Regional Airport Authority | Crescent City, CA :: Ms. Hall drafted the Mitigation and Monitoring Plan for Terminal Replacement, and provided QA/QC review of Habitat Mitigation and Monitoring Plans for the Pacific Shores, Bay Meadows, and CEC mitigation sites. Review ensured consistency with Coastal Development Permit conditions of approval as well as overall clarity. Drafted illustrative section of dune restoration concept. **Winner of the 2017 ASCE North Coast Environmental Project of the Year, the 2017 ASCE San Francisco Section Airport/Ports Project of the Year, and the 2017 ACEC California Honor Award.**

Environmental Planner :: Humboldt Road Mitigation Plan | Del Norte County, CA :: Ms. Hall drafted the Mitigation and Monitoring Plan for wetland and riparian habitat mitigation. She provided compliance with USACE and Coastal Commission requirements.

Landscape Planner :: Dune Vulnerability and Adaptation Study | Friends of the Dunes | Humboldt County, CA :: Ms. Hall developed the study concept, teamed with the local agency, and project managed portions of the study to assess the vulnerability of dunes and shoreline along the Eel River Delta. Discussion of sea level rise impacts to the coastline and coastal processes is included in the project.

Landscape Architect :: Thompson Creek Trailheads | City of San Jose, CA :: Ms. Hall oversaw the landscape design of site amenities, including stone veneer post and steel rail fencing and custom decorative concrete paving patterns, to create a coherent identity and aesthetic compatible yet distinct from other San Jose bicycle trails.

Landscape Architect and Planner :: Eel River Estuary and Centerville Slough Ecosystem Enhancement Project | CalTrout | Humboldt County, CA :: Ms. Hall prepared maps and drafted text to facilitate development of initial description of project goals and objectives, and ecological issues and functions addressed through the project. She subsequently developed outlines and substantially drafted the text of the closely related Habitat Mitigation and Monitoring Plan and

Adaptive Management Plan. She coordinated with specialist disciplines, including biologists and ecologists, who also contributed to these plans.

Environmental Planner :: Rohner Creek Flood Control, Habitat, and Seismic Improvements Project | City of Fortuna, CA :: The objective of the study was to analyze the Rohner Creek watershed and identify potential flood reduction improvements to reduce the frequency of flooding events along the Rohner Creek channel. Flood reduction improvements analyzed included channel widening and terracing with habitat improvements, diversion pipelines, and detention basins. Ms. Hall prepared a Stream Corridor Management Plan.

Landscape Architect and Planner :: Pigeon Point Erosion Control and Shoreline Protection | Half Moon Bay, CA :: Ms. Hall drafted and illustrated a brief of the revegetation/bioengineered approach to address hillside and shoreline erosion, including preliminary plant palette. She developed visual simulations of different engineered shoreline protection treatments.

Landscape Architect and Planner :: Eureka Waterfront Trail | City of Eureka, CA :: Landscape architecture responsibilities included leading planting design for approximately one mile of bike trail along Eureka's industrialized waterfront and at mitigation sites, including 100% design plans and specifications. Planting considerations included narrow planting beds, hardiness and survivability with no available irrigation, and seasonal high winds. Ms. Hall also produced 30% landscape plans for a trailhead park including parking, children's play area, and bioretention lawn. She developed a 3D model of boardwalk concepts. Environmental planning encompassed development of the Mitigation and Monitoring Plan. The project is entirely within the California Coastal Zone.

Landscape Planner :: Yurok Long Range Transportation Plan | Klamath and Weitchpec, CA :: Ms. Hall developed a ten-year update to the tribe's Long Range Transportation Plan, following standards set forth by the Federal Highways Administration. The plan update included coordination with the tribal transportation department, two community meetings, and the development of new project concepts and cost estimates.



about GHD

GHD is one of the world's leading professional services companies, operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

www.ghd.com



PLANWEST

PARTNERS, INC.



PROPOSAL TO PROVIDE PROFESSIONAL SERVICES FOR SITE IDENTIFICATION, ASSESSMENT, AND ENVIRONMENTAL REVIEW

For a Small Volume Transfer
Station to serve the communities
of Smith River, the Tolowa Dee-ni'
Nation and Fort Dick

ORIGINAL

*Submitted to:
Tedd Ward
Del Norte Solid Waste
Management Authority
1700 State Street
Crescent City CA 95531*



This document printed on 100% post-consumer content recycled paper 

Tedd Ward
Del Norte Solid Waste Management Authority
1700 State Street
Crescent City, CA 95531

January 28, 2019

RE: Professional Services Proposal for North County Small-Volume Transfer Station Site Identification, Assessment, and Environmental Review

Dear Tedd,

Planwest Partners Inc. and Local Engineer Michael Young propose to provide planning and special study services to the Del Norte Solid Waste Management Authority JPA. The opportunity to apply our waste management and facility siting expertise to identifying a north county waste and recycling facilities site is very much of interest to our team. Our proposal documents in-depth local government services experience and our site selection, environmental review, and municipal and coastal planning skills.

We are excited to partner with Mike Young on this proposal and together have decades of combined Del Norte County project experience. Our proposed approach and team will provide the authority with all necessary Site Assessment technical information and support, including:

- Knowledge and understanding of constraints and opportunities in North Del Norte County.
- Familiarity with County plans and processes.
- Experience with site mapping and site analysis.
- Knowledge of state and local permitting agencies and processes
- Expertise in CEQA/NEPA analysis and processes.

We understand that transfer stations can be one of the most effective waste dumping deterrents available to rural communities, and an accessible location can have significant environmental benefits. The SWMA has already demonstrated a waste management and diversion commitment with your Klamath and Gasquet stations. If selected we will work cooperatively to help you offer the same services and support to the North County communities of Smith River and Fort Dick, and the Tolowa Dee-ni Nation. We also understand that these facilities can be costly to operate and can offer experience in cost effective site development and operations practices.

With the site assessment report, environmental review, and negotiations assistance, we hope to provide the Authority with a clear and timely path towards land acquisition, site design, and eventual construction. We appreciate the opportunity to submit our proposal and look forward to the opportunity to answer any questions you may have.

Sincerely,



George Williamson AICP, Principal Planner/ Partner



Vanessa Blodgett, Senior Planner/ Partner

Planwest Partners, Inc.
1125 16th Street, Suite 200, Arcata, CA 95521
707.825.8260

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Firm Organization

PLANWEST PARTNERS, INC.

Established in 1997, Planwest provides community, land use, environmental, economic, and transportation planning services. Our firm is committed to working collaboratively with our clients and communities to deliver outcomes that promote sound growth, economic sustainability, and environmental stewardship. Located in Arcata, the firm currently employs ten staff led by three partners— George Williamson, Colette Metz, and Vanessa Blodgett.

We pride ourselves on serving client needs, engaging the public in visioning and place-based strategies, providing concise and engaging work products, and implementing comprehensive planning programs that serve to maximize the potential for success based on available and potential resources. Planwest provides a full range of planning services, including:

- Community, General, and Specific Plans
- Strategic Plans and Visioning
- Project Management
- Site Selection, Design, and Feasibility Studies
- Master Plans and Capital Improvement Planning
- Community Outreach and Meeting Facilitation
- Environmental Planning Services – CEQA and NEPA Compliance
- Geographic Information Systems (GIS) Mapping and Data Management
- Economic Development Planning
- Land Use and Community Plans
- Hazard Mitigation and Emergency Management Planning
- Grant Writing
- Survey Research

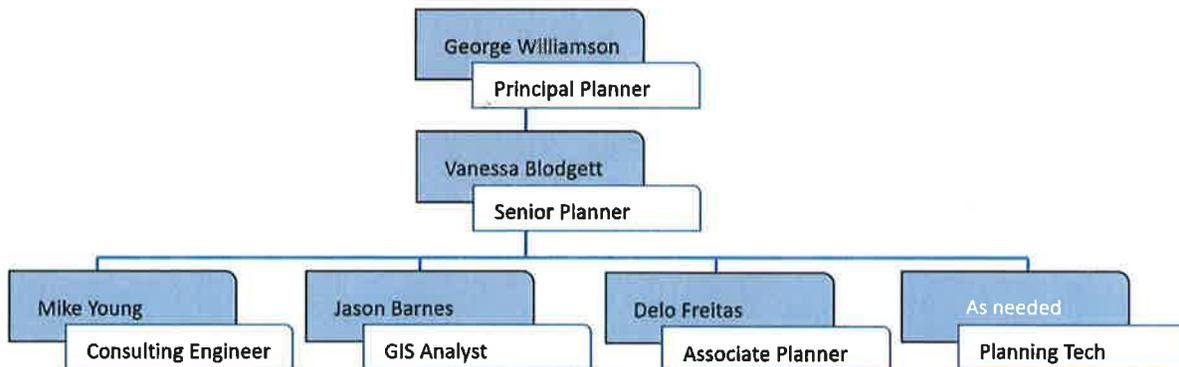
The Planwest team is qualified and committed to assessing needs, prioritizing goals, and engaging the community as outlined in the RFP. Our multi-disciplinary staff offers a unique combination of experience with permitting and design of similar waste facilities for the Humboldt Waste Management Authority, paired with an intimate knowledge of municipal planning and coastal permitting. Our approach is to provide customized outreach and goal-oriented assistance with targeted input opportunities to maximize understanding of an organization's needs. We present our analysis in a clear, readable format with supplemental tables, graphs, and spatial data to demonstrate our conclusions.

Planwest offers permitting expertise and regulatory compliance experience for addressing potential environmental issues with agencies and communities. Planwest will draw upon our experience working with local and state agencies to offer suggestions for alternatives, to avoid or reduce impacts and address regulatory agency concerns. Planwest staff's knowledge of City and County code requirements will help anticipate design issues and address them early in the process. In particular, Planwest staff has undertaken a variety of site assessment and permitting

projects in Coastal California and understands the potential concerns of permitting agencies and the surrounding community. Planwest has the experience and expertise necessary to find common ground among stakeholders, enter negotiations of behalf of clients, and foster multi-agency cooperation.

Planwest also understands that new waste systems may be met with community resistance. Providing safety assurances will be important for building community support. The environmental document that Planwest proposes to prepare will contain information on potential impacts, their level of significance, and any necessary mitigation. Planwest also proposes to prepare a clear and concise project description for the transfer station. This information can be easily extracted by DNSWMA in order to gather community input or disseminate the information in flyers, public service announcements and other community information.

The proposed Principal-in-Charge is George Williamson. The proposed Project Manager is Vanessa Blodgett, Senior Planner and Firm Partner. Ms. Blodgett will be responsible for the day-to-day management of the proposed project, including overseeing the preparation of the CEQA documents, and coordinating subconsultants and firm staff.



Key Personnel

We've put together an experienced and comprehensive project team to meet the goals of the Waste Management Authority. We've teamed with skilled individuals with unparalleled reputations in their respective field. The Planwest team includes the following expertise:

Planwest Partners Inc. – Land Use Planning, Economic Development, Public Outreach
Michael Young– Civil Engineering, Site Planning, Water and Wastewater Systems

Team member biographies and project roles are described below. Detailed resumes are included in Appendix A.

Michael Young, California RCE #C17413

Project Engineer

Michael Young has a wide depth and breadth of knowledge in planning and engineering services throughout California and has spent many years working in Del Norte County and the Crescent City area in particular since 1973. His expertise includes a variety of public service projects, including site planning, building design, and water and wastewater systems. Michael has spent a total of ten years serving the City of Crescent City in a variety of roles including City Engineer, Director of Public Works, and City Manager spanning from the 1970s to 2018 and is intimately familiar with the area and its players. Michael also spent two years working for Del Norte County serving as both the County Engineer and the Deputy Director of the Community Development Department from 1998-2000. Michael now works part time as a self-employed civil engineer.

George Williamson, AICP

Principal Planner

George Williamson is Principal Planner and owner of Planwest. George's 35+ years of experience includes working as a public agency and private sector planner in California, Oregon, Washington and Arizona. George moved to Humboldt County in 1997 to start Planwest Partners after more than twenty years as an agency and consulting planner. For the last fifteen years, he has been deeply involved in community planning and economic development activities on the North Coast. George currently serves as the contract city planner for the City of Ferndale and serves on the City of Arcata Energy Committee. His community, land use, and transportation planning experience offers a broad perspective when engaging organizations, agencies, and stakeholders in developing investment, capacity, and implementation strategies. George will serve as Principal in Charge for the Arcata West End Specific Plan.

Vanessa Blodgett

Senior Planner and Project Coordinator

Vanessa Blodgett is a Senior Planner with Planwest Partners. She has experience working with national, state, private, and local agencies on resource management, community infrastructure

and planning projects. Vanessa has expertise in land use planning and environmental compliance and mitigation monitoring programs subject to the California Environmental Quality Act. Her knowledge and leadership in policy development and program implementation has shaped outcomes for projects such as the City of Arcata Land Use Code; Samoa Town Master Plan; and the City of Ferndale Historical and Cultural Resources and Safety Element Updates. Her planning experience includes the preparation and processing of planning documents, environmental permits, environmental impact reports, mitigated negative declarations, and policy analysis.

Delo Freitas

Associate Planner

Delo Freitas is an Associate Planner for Planwest and formerly worked as a planner for the City of Eureka's current planning team. In her time at the City, Delo worked with City commissions to process a variety of permits, including CUPs and CDPs, and served as the designated staff for the City's Historic Preservation Commission. On past projects at Planwest, she has worked collaboratively with local governments and districts, State and federal regulatory agencies, and community groups on a variety of projects including environmental review per CEQA and NEPA, and development review including subdivisions, lot line adjustments, and design review projects. She is well-versed in environmental analysis processes, permitting, and community engagement activities.

Jason Barnes

GIS and Land Use Analysis

Jason Barnes is a Geographic Information Systems (GIS) analyst and graphics coordinator at Planwest Partners with over nine years of experience working with non-profit, federal agencies, and consulting firms. He has worked on a large range of projects such as regional irrigation, backcountry lake bathymetry, glacial surveys, socio-spatial business modeling, and transportation modeling. He is currently on the board of directors for the Bigfoot Trail Alliance, and is in the process of receiving his GIS Professional (GISP) certification through the GIS Certification Institute. His skills range from socio-spatial analysis, interactive mapping development, land-use modeling, and cartographic design. He is highly experienced in Esri software and Adobe CS creative suite.

Related Experience

Planwest's staff has an in-depth knowledge of Del Norte County planning and the area's opportunities and constraints and has also worked with the Humboldt Waste Management Authority (HWMA) on a variety of projects similar in nature and scope to the current proposal. Below are several recent and ongoing projects which exemplify our interests and expertise.

HUMBOLDT WASTE MANAGEMENT AUTHORITY – PERMANENT WASTE TRANSFER STATION SITING AND ENVIRONMENTAL IMPACT REPORT

Planwest assisted the Humboldt Waste Management Authority in its siting study considering multiple sites and proposal to locate a 50,000+ square foot, permanent Waste Transfer Station at the selected 10-acre Hawthorne Street site in Eureka. Planwest was involved in reviewing and analyzing multiple sites being considered by the Waste Management Authority. Upon site selection, Planwest then led a team of environmental specialists in preparing the required environmental analysis and documentation (an Environmental Impact Report) and coordinating agency review for the project. Key issues included access and circulation, drainage, habitat impacts, alternative rail loading facilities, and compatibility with surrounding uses. The EIR included several circulation alternatives for Hawthorne and Felt Streets. Planwest also prepared the project's coastal development permit application materials for the City of Eureka.

HUMBOLDT WASTE MANAGEMENT AUTHORITY REGIONAL FOOD WASTE DIGESTER

Planwest assisted the HWMA in locating and permitting a planned regional food waste digester, composting, and energy facility in the City of Eureka, CA. The facility would convert food waste to soil amendments, with methane gas produced during the digestion process converted to electricity to power project facilities. The proposed site is adjacent to the Elk River wastewater treatment facility. Planwest led a team of environmental specialists in preparing the required CEQA documentation (an initial study and mitigated negative declaration) and coordinating agency review for the project. Key issues included access and circulation, drainage, solid waste, sea level rise, consistency with Eureka's Local Coastal Program (LCP), and impacts to coastal wetlands, cultural resources, air quality and traffic. Planwest staff coordinated environmental and permit issues with HWMA and City staff. Planwest also advised HWMA on the required coastal development permit requirements of both the City and Coastal Commission, and environmental permitting for the project. This included making a key determination that the facility constituted as an energy project, which modified certain wetland requirements.

HUMBOLDT WASTE MANAGEMENT AUTHORITY – ADDITIONAL DEH TRAFFIC ANALYSIS

Planwest Partners has been retained by Humboldt Waste Management Authority (HWMA) to help renew their Solid Waste Facility Permit for the Hawthorne Street Transfer Station in Eureka

California. The renewal of this permit is necessary to fulfill Humboldt County's Division of Environmental Health and California Integrated Waste Management Board requirements. Planwest led an interdisciplinary team including SHN Geologist and Engineers and conducted a traffic analysis of the surrounding intersections and made recommendations to HWMA on the findings of the traffic analysis. Planwest's management role in this project involved coordination between SHN as a subcontractor, HWMA as a client and the affected agencies such as the City of Eureka, Caltrans and the County Environmental Health Department.

DEL NORTE LOCAL AGENCY FORMATION COMMISSION

George Williamson, has served as the Contract Executive Officer, providing contract staffing services to the Del Norte Local Agency Formation Commission (LAFCo) since 2008. More recently Vanessa Blodgett has served as the Administrator/Analyst to Del Norte LAFCo. Their services include the preparation, management, and review of Spheres of Influence for Crescent City, fire protection districts, water districts, the County Service Area which provides sanitary services, and other special districts in Del Norte County. These reports require an in-depth understanding of a variety of services throughout the county, and contain an analysis of infrastructure needs and deficiencies, financing constraints and opportunities, and government structure options.

Del Norte LAFCo responsibilities include managing the Municipal Service Reviews and Sphere of Influence Updates for cities and districts within Humboldt County, considering opportunities for shared services or alternative governance structure options to increase cost efficiencies, conducting LAFCo meetings and hearings, and evaluating boundary change proposals in conformance with procedural requirements of the Cortese-Knox-Herzberg Local Government Reorganization Act. Planwest continues to work with Fire Protection Districts in Del Norte County to determine appropriate boundary adjustments and spheres based on capacity needs, response times, and areas served.

YUROK INDIAN HOUSING AUTHORITY SITE DEVELOPMENT STUDY

Planwest was retained by the Yurok Indian Housing Authority to prepare a business feasibility study for a vacant, two-acre commercially-zoned property in the Crescent City area purchased by the Housing Authority in 2011. The feasibility study served to identify viable uses that could be developed on the site. In particular, the Housing Authority was interested in uses that would generate a sustainable funding source for the Kohte'li Foundation, a 501(c)(3) non-profit organization established under the sovereign authority of the Yurok Tribe in 2009.

A Planwest team guided the planning process and engagement with the project committee. Including an architect and building contractor, to provide design and development cost estimates. Planwest worked closely with a core planning team to identify the highest and best use for the site. The Site Feasibility Study included the following: use assumptions and use-based market analysis; demographic and employment data; site features and existing use inventory; site plan concepts and phased development options; job projections; extended stay occupancy projections; building estimate; and financial statements for several commercial use options.

DEL NORTE LOCAL TRANSPORTATION COMMISSION - WILD RIVERS REGIONAL BLUEPRINT PLAN GIS PROJECT

Planwest assisted the Del Norte Local Transportation Commission (LTC) with the development of the first phase of the Wild Rivers Regional Blueprint Planning GIS Project for Del Norte County. Planwest analyzed and adapted Del Norte County, City of Crescent City, and tribal government (Elk Valley and Smith River Rancherias) land use data for strategic UPlan modeling. The UPlan model models demographic and land use data to determine acres needed for future housing, expressed as per household, percent of households in each density class, and average parcel size for each density class. Commercial and Industrial projections based on employment data, were also provided.

For the initial phase of the Del Norte Blueprint GIS Project, Planwest performed modeling and analysis for new development that could occur in areas attractive due to their proximity to existing development, services and transportation facilities, such as Highway 101 and arterial and collector roads. Planwest also weighted discouragers, and masked areas, such as public lands, where development would not occur. Modeling generated acres of industry and commerce land to be consumed based on workers per household, or percent of workers in each employment class, and average area per worker (in acres). Future land consumption modeling produced a land allocation table. George Williamson AICP, Planwest Principal, gave a blueprint plan presentation at the 2009 Del Norte Economic Summit.

ARCATA COMMUNITY RECYCLING CENTER – REGIONAL MATERIALS PROCESSING FACILITY SAMOA, CALIFORNIA

Planwest prepared a Coastal Development Permit application and supporting environmental documentation (Initial Study and Mitigated Negative Declaration) for the Arcata Community Recycling Center (ACRC) to operate a recycled-materials processing facility in Samoa, Humboldt County, California. The facility, now in operation is located on a 2.3-acre parcel adjacent to Vance Avenue, approximately one-tenth of a mile northeast of the Vance Avenue/LP Drive intersection. The facility serves the Humboldt Bay region, primarily the cities of Eureka and Arcata, and the unincorporated community of McKinleyville. This industrial use accepts recycled materials for sorting, packaging, and export.

The facility allowed ACRC to expand from its current 5,000 square foot facility in Arcata to a 38,800 square foot facility (35,800 ground floor plus 3,000 second floor) that accommodates new sort-line technology, expanded tipping floor area, and increased bale storage area. ACRC installed a new processing line with the capacity that handles up to 30 tons per day of commingled California Redemption Value (CRV) containers. A separate sorting line was installed for receipt of 65 tons per day of fiber recyclables, allowing expanded fiber recycling services at that time. This permanent facility was designed for commercial haulers use, and not open for public drop-off. The facility now operated by Recology, has generated approximately 25 trucks trips per day, five days a week. Trucks include commercial haulers dropping-off and out of the area transport trucks.

DEL NORTE COUNTY – NORTH COAST SBDC MILL SITE REUSE STRATEGY PLAN

Planwest led a multi-disciplinary team including Stover Engineering, to develop a reuse strategy and marketing plan for two former mill sites in Del Norte County. Key tasks in the project included preparing site assessments; developing a range of reasonable uses that could be accommodated on the site; preparing an infrastructure needs assessment and cost analysis; preparing a development feasibility analysis; and preparing an outline of site development tasks. One of the highest priorities of the project was planning for the development and operation of a resource recovery park at one of the sites. Project outcomes were a set of reuse options for economic development and job creation for Del Norte County.

HUMBOLDT COUNTY CAO – SOLID WASTE SERVICES ASSESSMENT

Planwest staff assisted the Humboldt County Administrator's office in conducting a solid waste services assessment in preparation for the 2007 waste collection and disposal contract negotiations. The purpose of this assessment was to collect input on the solid waste services, from residents that live in the unincorporated areas of the County. The public input was collected via six community discussions, an online survey and a telephone comment line.

Planwest staff implemented several methods to inform residents about the multiple public input opportunities available to them. Public service announcements were mailed to all of the local print media organizations, and numerous local radio and T.V. stations. The PSAs were sent to all media outlets two weeks prior to each community discussion. The PSAs not only contained community discussion dates and times, but also included the online survey URL and telephone comment line phone number. In addition to PSAs, flyers were created for each community discussion meeting and posted in various locations prior to each meeting. The flyers were also sent via email to local community groups and organizations. A public announcement was also made at the Board of Supervisors meeting on March 20, 2007.

Community discussions were held in McKinleyville, Loleta, Willow Creek, Humboldt Hill, Bayside and Garberville. Each meeting started with an informative slide show presentation followed by a comment, question and answer period. A representative from the County and the Humboldt Waste Management Authority, the districts County Supervisor, consultants, and at least one waste hauler were in attendance at each community discussion. The community discussions were lightly attended by County residents.

Residents at all discussions expressed a need for additional recycling services. Residents that live in areas around Humboldt Bay would like additional curb side services, rather than additional drop off facilities. Residents that live in outlying areas of the County would like the container sites to accept a larger array of recyclable materials and would also like information posted about what materials are accepted at the site and disposal costs. Residents in outlying areas would also like local greenwaste drop-off facilities established. In addition, interest in periodic large item (i.e., appliances, vehicles) and e-waste collection days was expressed.

References

CHARLIE HELMS

Crescent City Harbor District CEO and Harbor Master

101 Citizens' Dock Road Crescent City, CA 95531

Phone: (707) 464-6174 x24

- *Associated Project Title:* Harbor District Local Coastal Program (LCP) – Amendment
- *Location:* Crescent City harbor
- *Start/End Dates:* 2017-present
- *Project Description:* Planwest prepared LCP Amendment for County of Del Norte and Crescent City proposing updated policies, programs and zoning codes for Crescent City Harbor District Land Use Plan Adoption - R1805C & GPA1802C. This included:
 - Land Use Plan Chapters 1-4 Policies and Programs
 - Chapter 5 Maps and Exhibits (Harbor District Map Proposed Land Use Changes)
 - Chapter 6 Harbor Zoning
 - County of Del Norte- Amendments to Title 21 of Del Norte County Code
 - Harbor Land Use Plan Matrix by Existing Policy and by Assessor's Parcel Number
 - Chapter 7 Environmental Documents

WARD STOVER

Stover Engineering Principal Engineer

711 H Street, Crescent City, CA 95531

Phone: (707) 465-6742

- *Associated Project Title:* Past Del Norte Mill Site Reuse Studies and Tolowa Dee-Ni' Nation XVR Wastewater System Improvement Planning Project 2018
- *Location:* Del Norte County
- *Start/End Dates:* Mill Site reuse: 2000 - Wastewater System Improvements: present.
- *Project Description:* Planwest will be coordinating with Del Norte County regarding preparing a Wastewater System Initial Study consistent with funding requirements. This will rely on the project engineering report and additional project reports and incorporate project alternatives, archaeological and historic preservation act compliance, biological report, etc.).

BLAKE INSCORE

Crescent City Mayor and Del Norte LAFCo Chairperson

377 J Street Crescent City CA 95531

Phone: (707) 218-1037

- *Associated Project Title:* Del Norte LAFCo Executive Officer & Administrator Staffing Services

- *Location:* Del Norte County
- *Start/End Dates:* 2008 – present
- *Project Description:* Planwest provides Del Norte LAFCo with contract services including preparation, management, and review of Municipal Services Reviews and Spheres of Influence Updates for Crescent City, fire protection districts, water districts, the County Service Area which provides sanitary services, and other special districts in Del Norte County. These reports convey a detailed understanding of the variety of services throughout the county, and contain an analysis of infrastructure needs and deficiencies, financing constraints and opportunities, and government structure options.

Approach to Scope of Service

PROJECT UNDERSTANDING

Planwest will work with the Del Norte Solid Waste Management Authority (DNSWMA) to identify, assess and conduct initial environmental review for small volume transfer station sites to serve the Smith River, Fort Dick and Tolowa Dee-ni Nation communities. The objective is to evaluate a number of sites and make a criteria based recommendation of 2-4 potential sites. This requires evaluation of multiple sites to serve the communities and providing recommendations based on utilities availability, development potential and costs, willing sellers, feasible acquisition costs & operational factors, including administration, management, staffing, capital expenditures, and on-going operational costs.



TASK A.1: SCOPING AND KICK-OFF

The Planwest team will meet with DNSWMA representatives at project onset to discuss and confirm the scope of work, major milestones, deliverables, and schedule of key meetings. Planwest Staff will review existing information and the existing sites of the Klamath and Gasquet transfer stations. Prior to the kick-off meeting, strategic feasibility study questions and issues will be provided. The purpose of the kick-off meeting is to establish a set of mutual agreed-upon project expectations, including the First and Second Tier Criteria. Planwest will prepare a detailed project outline and list of additional information required to begin site selection and will send this list to DNSWMA staff.

Deliverables: Pre-meeting questions.

Kick-off meeting summary.

Electronic copy of information needs list.

TASK A.2: EXISTING CONDITIONS SUMMARY AND ASSESSMENT USING TIER 1 CRITERIA

Planwest will conduct an overall assessment of the outlined project area (North of Dr. Fine Bridge, South of Clifford Kamph Park, East of US 101, 5 miles or less from 101 along paved roads) to gain a understanding of existing physical conditions and siting opportunities. From a preliminary review, the potential area for sites will be somewhat limited by geography (e.g., hillside slopes) and proximity of Coastal Zone boundary. Data will include the following:

- General Plan and Zoning designations (limited to Commercial, Manufacturing/Industrial, Public Facility)
- Parcel Size (2-15 ac range)
- Site grade (minimum 1.5 ac to be graded for public unloading area; potential for grading a height difference of not less than 8 ft. across property)
- Highway 101 Exits/On-ramps/ County road access
- Number and size of parcels within outlined project area
- Flood Zones
- Coastal Zone Boundary
- Wetlands Search
- California Natural Diversity Database (CNDDDB) Search
- Distance from Existing Transfer Stations, US 101, Smith River Post Office, Howonquet Hall
- Preliminary review of Existing Structures/Roads on Sites

Planwest will also contact agency staff (County of Del Norte, CalRecycle, State of California North Coast Regional Water Quality Control Board, California Coastal Commission staff, if applicable) to better understand permitting constraints and opportunities.

From this information, Planwest will compile a list of 12-18 potential properties contact the County Assessor for property owners information and the Del Norte County Community Development Department for land use and development information. Local area knowledge over

decades of experience in Del Norte County planning and engineering projects will ensure the team is able to perform preliminary site assessments in an efficient and timely manner.

Planwest staff offers more than 20 years experience working in Del Norte County, starting with the Del Norte County General Plan Update in the mid to late 1990's. Planwest performed very similar functions for the Humboldt Waste Management Authority on their transfer station site selection, permitting and environmental analysis. Local engineer Mike Young offers even more local experience in both private and public sector work.

Planwest will then prepare a letter to be reviewed and signed by Tedd Ward, DNSWMA Director, informing the property owners of DNSWMA's interest in acquiring a site for a North County transfer station and requesting a response if the owner is potentially interested in selling their land, and at what price. If other forms of contacting owners are discovered based on relevant real estate listings or other public information sources, Planwest will follow up with those owners by phone or email as directed by DNSWMA.

Planwest will meet with DNSWMA's staff in person or via conference call to obtain feedback on Tier 1 options, funding needs, and other priorities necessary to meet administrative and regulatory requirements prior to beginning Task 3.

Deliverables: Existing conditions summary included in the Final Report.

Master Map showcasing all Tier 1 sites.

Master list summarizing site based information, with location information (address, APN, GPS coordinates) and a qualitative comparison of necessary property improvements. The list will include Appendices for information gathered from relevant property listings and site APNs eliminated from further analysis based on application of above criteria. To be provided in excel and pdf.

TASK B.1: ASSESMENT USING TIER 2 CREITERIA

After meeting with DNSWMA staff to review Tier 1 options and screening based on willing seller responses and County development restrictions, Planwest will begin a more refined sites review by applying the additional criteria listed below:

- Access to utilities including water, sewer, power, and phone/cellular service
- Development potential based on adopted plans and agency permitting
- Refined review of Existing Structures/Roads on Sites, describing necessary improvements including narrative description of all major areas of work necessary prior to grading, and options for use or disposition of existing structures
- Estimated area affected by development, overall grading and cut/ fill material volumes with emphasis on balance grading to minimize import/export
- Approximate wetlands/ESHA area for each site, based on available resource mapping and buffer and easement areas needed, with approximate usable acreage calculations
- Estimated area of additional required pavement

- Site drainage/stormwater flow patterns based on topographic and resource mapping
- Other known site constraints (e.g. proximity to neighbors, depth of groundwater, sensitive species, access, etc.) based on field observations and assessments
- Preliminary purchase price estimates based on seller asking price.

Using this information, Planwest staff and local engineer Mike Young will work to develop a list of prioritized sites using knowledge of local conditions, permitting and design processes to weigh criteria. Previous experience on site analysis projects in Del Norte and Humboldt Counties will assist the team in performing this task and will help to ensure recommendations are realistic and based on possible risks and benefits analysis. This includes an understanding of climatic conditions for the area, development patterns that may affect future demand, and permitting requirements of affected agencies. After working to develop priorities, the team will meet with DNSWMA staff to present prioritized sites in anticipation of presenting to the Board and work with staff to refine the sites down to 2-4 options.

Deliverables: Master Map with 2-4 Tier 2 sites most favorably meeting Tier 1 and 2 requirements.

Site Maps for each of the 2-4 chosen sites with relevant criteria, including utilities and indicators for areas with potential sensitive species and habitats, including wetlands and EHSAs.

Site matrix summarizing site information and ranking sites based on above criteria, with location information (address, APN, GPS coordinates), development potential, permitting requirements, and a qualitative comparison of known issues and necessary site improvements (including grading/paving, height differential, sensitive species/habitat, cost).

TASK B.2: PREPARE DRAFT REPORT

Planwest will then draft and submit a written Initial Site Assessment Report with narratives as described in the deliverables section of Tasks 2 and 3. The Report will conclude with any potential site challenges or advantages recommended for further analysis. DNSWMA staff will review and comment on the draft Report and Planwest will schedule a final meeting with staff in person or via conference call with review draft and discuss any site details that may not have been included in the draft, including site ownership and value/price.

Deliverables: Draft Site Assessment Report incorporating Existing Conditions summary, Tier 1 and Tier 2 Maps and Lists, and relevant Appendices in Word and PDF format.

The Site Assessment Report is expected to include the following:

- Introduction
- Existing Conditions Summary and SWOT Analysis
- Site requirements and day-to-day site activity overview
- Assessment Criteria (both Tier 1 and 2)
- Prioritized site list with Tier 2 maps and detailed site-specific data for 2-4 sites
- Summary and Recommendations of next steps

- Appendix A: Detailed site comparison/ranking matrix of Tier 2 sites
- Appendix B: Relevant property listings and site APNs eliminated from further analysis based on application of Tier 1/Tier 2 criteria (including full list and maps of Tier 1 Sites produced in Task 2)
- Appendix C: DSWMA Letter to Property Owners

TASK B.3: PRESENT FINAL REPORT

Within two weeks of receiving Authority comments and undergoing discussions with staff, Planwest will prepare a final version of the Report and an accompanying presentation to the Authority Board of Commissioners. Planwest representatives will attend one meeting and will be prepared to answer Board questions. As part of the final report, a preferred site will be identified, based on criteria established in the study, and an exclusive right to negotiate between property owners and DNSWMA will be drafted for the Board use.

Deliverables: Final Site Assessment Report that incorporates existing conditions summary, Tier 1 and 2 Maps, Lists, and relevant Appendices in Word and PDF format.

Draft slide presentation for Authority Director's use in presenting sites/report to the Authority Board.

Attendance at Board meeting (target date July 16, 2019).

TASK C.1: SUPPORT NEGOTIATING MULTIPLE RIGHTS OF FIRST REFUSAL

If requested, Planwest will assist Authority staff as required in negotiations for purchasing properties designated by the Authority Board. It is understood this task will be ongoing, and that Planwest will be reimbursed on an hourly basis for this task.

Deliverables: Review and Comment on agreements/documents as required.

In-person and remote communication as required.

TASK D.1: DRAFT RFP FOR DESIGN & ENGINEERING

Planwest will assist Authority staff in preparing a draft Request for Proposals (RFP) to select an Engineering or Design firm to produce preliminary design/construction documents, all required permitting, construction quality assurance plans, and MMRP implementation strategies if necessary. The RFP will include a project description and site information allowing the selected consultant to proceed with design and construction documents.

Deliverables: Draft RFP incorporating design, construction, and permitting needs for selected site, as directed by Authority staff and elected officials.

(OPTIONAL) TASK D.2: PREPARE INITIAL STUDY (IS), DRAFT, AND FINAL ENVIRONMENTAL DOCUMENTS

As an amendment to the Service Agreement, Planwest proposes to address California Environmental Quality Act (CEQA) compliance once a site is selected for acquisition and development. Planwest will prepare a draft IS analyzing the proposed project's compliance with CEQA Guidelines §15063 and consist of:

- A proposed project description and location
- An environmental setting description (baseline)
- An identification of the potential environmental effects of the project using the CEQA Environmental Checklist Form (CEQA Appendix G). Responses are based on substantial evidence in the record, as provided by existing sources.
- Mitigation measures (if any) required for potentially significant environmental effects
- Names of affiliated persons and agencies who participated in the preparation of the IS, and of the information sources used in the document.

Environmental effects to be evaluated will cover all the environmental issues listed in the CEQA Environmental Checklist Form (Appendix G of adopted CEQA Statute and Guidelines), consisting of:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Energy
- Cultural/Historical Resources
- Geology and Soils
- Green House Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality (with SLR)
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire Risk
- Mandatory Findings of Significance

It is expected the majority of the analysis can be undertaken based on existing information compiled in Tasks 1-5. However, depending on the specifics of the site itself, environmental checklist analysis involving biological resources, hydrology and water quality, geology and soils, transportation and utilities, and tribal cultural resources may require additional information to be provided by DNSWMA and Del Norte County Planning Staff. Environmental documents also require tribal consultation. Planwest will assist the DNSWMA with Tribal Consultation notices in accordance with AB52. Planwest will assist the District by specifying the appropriate notices,

Request for Proposals for Northern Transfer Station Site Assessment Services

Exhibit A Project Timeline & Price Proposal

	Request	Proposed	Price Proposal
Release RFP	30-Nov-18		
RFP Questions	14-Jan-19		
Proposals Due	28-Jan-19		
Contractor Selected	19-Feb-19		
Contract signed	8-Mar-19		
Deliverables			
	Pre-meeting Scoping and Questions	11-Mar-19	
	Kickoff Meeting	13-Mar-19	
	Document Existing Conditions	Mar-April 19	
A	A - First Criteria Assessment & Maps	7-May-19	A: \$ 13,467 lump sum
	B1 - Second Criteria Assessment & Maps	4-Jun-19	
	B2 - Draft Initial Site Assessment Report	4-Jun-19	
	C1 - Negotiating Support	ongoing	
	B3 - Final Assessment Report	9-Jul-19	
B	B4 - Presentation to DNSWMA Board	16-Jul-19	B: \$ 18,625 lump sum
	Selection of Target Properties by DNSWMA		
D	D1 - Draft RFP for Design & Engineering	30-Sep-19	D1: \$2,348 lump sum
	D2 - Proposed Amendment for Completion of Environmental Document (included)	August-Dec 19	D2: \$16,045 lump sum
C	Hourly Rate for Task C1: \$112/ hour X 60 hrs		\$ 6,720 (for 60 hours)
	Total Price Proposal A + B + D1 + C		\$41,160.00
	Total Price Proposal with Environmental A + B + D1 + D2 + C		\$57,205.00

EXHIBIT B

2019 Planwest Rate Schedule

PLANWEST PARTNERS HOURLY RATE SCHEDULE	
Staff Position	Rate Per Hour
Principal Planner	\$112.00
Senior Planner	\$98.00
Associate Planner	\$78.00
GIS Analyst	\$72.00
Assistant Planner	\$62.00
GIS Technician	\$62.00
Planning Technician	\$58.00
Planning Intern	\$42.00

Contract Engineer – Michael Young

\$110.00/hour

Direct Expenses:

Mileage:	\$ 0.58 per mile or direct rental car/fuel costs
Telephone:	actual toll call costs
Printing:	direct printing and binding costs.
Postage:	current USPS rates
Label Sheets:	\$ 0.30 per sheet
Standard Envelopes:	\$ 0.03 per envelope
Manila Envelopes:	\$ 0.10 per envelope

Copying and Map Plots:

8 ½ x 11 B & W copies:	\$ 0.06 per page
8 ½ x 11 color copies:	\$ 0.50 per page
11 x 17 B & W copies:	\$ 1.00 per page
11 x17 color copies:	\$ 1.50 per page
Color Plots on bond (draft quality) roll stock (matte):	\$ 4.00 per square foot
Color Plots on Polypropylene stock (glossy):	\$ 5.00 per square foot
Color Plots on coated presentation stock:	\$ 6.00 per square foot

These fees are subject to annual review and adjustment.

Appendix A: Key Personnel Resumes

GEORGE WILLIAMSON

Principal, AICP



Mr. Williamson, Principal Planner and majority owner of Planwest Partners Inc., has over 35 years of experience working as a planner in California, Oregon, Washington and Arizona. Mr. Williamson has been providing contract planning and environmental services on the California North Coast since 1997. He has been the Humboldt Bay Harbor, Recreation, and Conservation District contract Planner since 2013. He has also provided planning and environmental services to the Crescent City Harbor District and the City of Point Arena. Since moving to the northcoast, he has been involved in community planning environmental compliance and economic development activities. His community, land use and transportation planning experience offer a broad perspective when engaging organizations, agencies and stakeholders in developing investment, capacity and implementation strategies. He has both principal and project management experience, with community and economic development expertise. He has been accredited by the American Institute of Certified Planners (AICP) since 1983 and is a life member of the American Planning Association (APA).



Relevant Project Experience

- **Humboldt Bay Harbor, Recreation and Conservation District**, currently serves as District Planner. Participate in a variety of planning, environmental review, and permitting activities for District projects. Coordinates with District staff and consultants.
- **Humboldt, Del Norte, and Shasta Local Agency Formation Commissions (LAFCo)**, currently serves as Executive Director.
- **Crescent City Harbor District Local Coastal Program Amendment** Prepared environmental analysis for both Del Norte County and Crescent City General Plan and zoning code updates.
- **Ferndale Wastewater Treatment Facility Initial Study/Mitigated Negative Declaration and Coastal Development Permitting**. Managed preparation of Initial Study/ Mitigated Negative Declaration to comply with the CEQA and Environmental Report to comply with NEPA.
- **City of Arcata Land Use Code** Served as the City lead consultant for the completion of the General Plan Update and Environmental compliance tiering of the Program EIR prepared by Planwest Partners.
- **City of Fortuna General Plan Update** Served as the City lead consultant for the completion of the General Plan Update and Program EIR certification.
- **Samoa Town Master Plan MEIR** Prepared Master EIR for the Samoa Town Master Plan and Humboldt County Local Coastal Program Amendment.

EDUCATION

San Diego State University, CA

Master of City Planning, 1988

Portland State

University B.S., Social

Science w/ Urban Studies

Certificate, 1976

TRAINING/PROFESSIONAL AFFILIATIONS

American Institute of Certified Planners 1983

American Planning Association Life Member 1981

Arcata Energy Committee

Chairperson , 2014-current

Efficiency Sales Professional

Institute Certification 2012

Vanessa Blodgett is a Senior Planner and partner with Planwest Partners Inc. She has over ten years of experience working with national, state, private, and local agencies on resource management, community infrastructure and planning projects. Vanessa has expertise in land use planning and environmental compliance and mitigation monitoring programs subject to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). Her knowledge and leadership in policy development and program implementation has shaped outcomes for projects such as the City of Ferndale Wastewater Treatment Project; the Samoa Town Master Plan; the City of Arcata Land Use Code; and numerous Humboldt Bay Harbor, Recreation and Conservation District Projects. Her planning experience includes the preparation and processing of planning documents, environmental permits, environmental impact reports, mitigated negative declarations, policy analysis, and implementation plans.



Relevant Project Experience

- **City of Arcata West End Specific Plan**
Prepared the West End Specific Plan (WESP) for the City of Arcata which included a circulation system component. The plan provided recommendations for improvements that encourage development.
- **City of Eureka Business Ready Implementation and Recommendation Plan.** Provided recommendations to make Eureka's development processes simple, concise, efficient, and streamlined, including policies and procedures changes.
- **Humboldt Bay Harbor Recreation and Conservation District Projects. Humboldt County, CA.**
Participates in a variety of planning, environmental review, and permitting activities for Harbor District projects. Coordinate with District staff and consultants; manage, prepare, and review CEQA documents; attend board meetings, prepare and present staff reports; coordinate and prepare coastal development permit applications for District projects and facilities.
- **Arcata Rail with Trail Connectivity Project Constraints Analysis, Initial Study and MND.**
Coordinated the preparation of the Environmental Constraints Analysis, Initial Study and MND for a proposed 4.5-mile long Class I, ADA accessible, non-motorized multiuse paved trail in Arcata. Coordinated with team members and stakeholders, identified/compared environmental constraints along the trail corridor for each of the trail alignments considered, and prepared several sections of the Initial Study.
- **Del Norte Local Agency Formation Commission (LAFCo), Staffing Services.**
Planwest provides contract staffing services to Del Norte LAFCo including the preparation, management and review of the Spheres of Influence (SOI) and of Municipal Service Reviews (MSR) for each city, fire protection district, water district, sanitary district, and other special districts.
- **Samoa Town Master Plan Environmental Documents and Local Coastal Plan Amendment**
Planwest lead a team in the preparation of the Samoa Town Master Plan Environmental Impact Report. During EIR preparation, review and certification, Planwest coordinated with County staff, the applicant

EDUCATION

University of California Santa Cruz
Environmental Studies/ Earth Sciences,
2005

TRAINING/PROFESSIONAL AFFILIATIONS

HSU Leading Organizational and
Community Change
Courses 2016-2017
Humboldt Area Foundation, Cascadia
Leadership Program
2011
Association of Environmental
Professionals
Advanced CEQA Workshops 2009-2018
Member, Association of
Environmental Professionals
2008-Present

Mr. Barnes, Geographical Information Systems (GIS) Analyst, has over 10 years of experience working as an analyst, technician, cartographer, programmer, and university lecturer in the GIS field. His art background and broad technical experience lends well to GIS and cartographic visualization and communication. He has both principal and project management experience on a wide range of projects from socio-spatial, transportation, interactive mapping, and large area climate projects. Mr. Barnes moved to Humboldt County in 2006 to start his higher education at Humboldt State University. For the last ten years, he has been involved in activities involving many local consulting, non-profit, and federal agencies. He is currently on the board of directors for the Bigfoot Trail Alliance, and is in the process of receiving his GIS Professional (GISP) certification through the GIS Certification Institute.



Relevant Project Experience

- **Humboldt Waste Management Authority (HWMA).**
Analyzed complex routing scenarios for food waste diversion for a potential bio-digester project in Eureka, California. This project looked at multiple routing scenarios utilizing route optimization, and waste collection vehicle options as viable solutions for a city-wide food diversion project.
- **Humboldt Transit Authority (HTA).**
Helped create the Humboldt County Transportation Services Guide for public transit and human services transportation for the Redwood Transit System (RTS), Eureka Transit Service (ETS), Arcata and Mad River Transit System (AMRTS), Blue Lake Rancheria Transit System (BLRTS), Klamath-Trinity Non-Emergency Transportation (KT-NET), and Trinity Transit.
- **Hiking Humboldt Volumes 1 & 2.**
Cartography for over 150 hiking maps for Hiking Humboldt Volumes 1 & 2. These books highlight familiar favorites, hidden gems, and unexpected adventures across Humboldt County. Each map is custom to provide aesthetics and clarity to complement each hike description, trail data, and tips for the hiking in the region.
- **Del Norte Local Agency Formation Commission (LAFCo)** Planwest provides contract staffing services to the Del Norte LAFCo including the preparation, management and review of the Spheres of Influence (SOI) and of Municipal Service Reviews (MSR) for each city, fire protection district, water district, sanitary district, and other special districts in Del Norte County.
- **Shasta County Local Agency Formation Commission (LAFCo) Fire Service Analysis.**
Planwest Partners provides contract staffing services to Shasta LAFCo. A fire district analysis was conducted looking at fire station response times, service areas, and route optimization.
- **Yosemite National Park Search and Rescue Cost Surface Analysis**
Created a model for a complex cost surface analysis for foot traffic travel times across the wilderness areas of Yosemite National Park. The model would utilize a last known location of a lost hiker, and create temporal travel time areas based on attributes such as terrain type, difficulty, hiker age, condition, etc.

EDUCATION

Humboldt State University
M.S., GIS, 2012
Northern Michigan University
B.F.A., Photography, 2002

TRAINING/PROFESSIONAL AFFILIATIONS

Database Design
Course 2018
Bigfoot Trail Alliance
Secretary 2016-Present
ESRI Training Courses
Member, ASPRS
2008-Present

Delo Freitas is an Associate Planner with Planwest Partners Inc. and formerly worked as a planner for the City of Eureka's current planning team. In her three years at the City, Delo worked with City commissions to process a variety of permits, including CUPs and CDPs, and served as the designated staff for the City's Historic Preservation Commission. Since starting at Planwest in Spring 2018, she has worked collaboratively with local governments and districts, State and federal regulatory agencies, and community groups on a variety of projects including environmental review per CEQA and NEPA, and development review projects as the City of Ferndale's contract City Planner, including subdivisions, lot line adjustments, and design review projects. She is well-versed in environmental analysis processes, permitting, and community engagement activities.



Relevant Project Experience

- **Open Door Community Health Clinic Facility IS**
 Planwest is currently assisting Open Door Community Health Clinic in the preparation of environmental review and the City's Planned Development (PD) and Design Review applications. The project will be located in central Arcata and areas of potential concern include traffic, biological resources, noise, and water quality.
- **Humboldt Bay Harbor Recreation and Conservation District Projects. Humboldt County, CA.**
 Participate in a variety of planning, environmental review, and permitting activities for Harbor District projects. Coordinate with District staff and consultants; manage, prepare, and review CEQA documents; attend board meetings, prepare and present staff reports; coordinate and prepare coastal development permit applications for District projects and facilities.
- **Samoa Town Master Plan Environmental Documents**
 Planwest lead a team in the preparation of the Samoa Town Master Plan Environmental Impact Report. During EIR preparation, review and certification, Planwest coordinated with County staff, the applicant and their consultants, and state, local, and federal agencies. Since its adoption, Planwest has continued to work with the applicant to coordinate with Humboldt County staff as well as the California Coastal Commission and State Water Board, and in 2018 Planwest drafted a Supplemental EIR to consider new and potentially significant project impacts.

EDUCATION

University of Washington Seattle
 Community, Environment, and Planning
 2014

TRAINING/PROFESSIONAL AFFILIATIONS

Member, SF Bay Area Chapter •
 Association of Environmental Planners
 2018-Present

CEQA in Practice Certificate
 UC San Diego
 Estimated completion April 2019

MICHAEL JAY YOUNG
3750 Lake Earl Drive, Crescent City, CA 95531

WORK EXPERIENCE

Michael Young – Civil Engineer January 2004 - present
Part-time self-employed civil engineer with practice focus on domestic and international public service projects, including site planning, building design, and water and wastewater systems.

City of Crescent City, California May 2008 – February 2009
Interim City Manager May 2017 – January 2018
Responsible for the administration and management of all City operations and recruitment of a permanent City Manager (2 terms)

City of Crescent City, California July 2000 – December 2003 (retired)
Director of Public Works/City Engineer
Responsible for the management of a municipal Public Works Department, including engineering; water supply, treatment and distribution; wastewater collection and treatment; streets; storm drainage; parks; and building inspection.

County of Del Norte, California May 1998 – July 2000
County Engineer, Deputy Director of Community Development Department
Directly responsible for engineering; roads; wastewater collection; drainage; and airport. Indirectly supervised planning and building inspection.

Michael Young and Associates April 1979 – May 1998
General partner of a small (10 person) general civil engineering company involved in the planning and design of residential and commercial land development and building projects. Work included planning and design of public works infrastructure to serve the developments, and structural design of residential, commercial and industrial buildings. Work also included developing on-site water and wastewater facilities needed to support development.

City of Crescent City, California May 1973 – April 1979
City Manager/City Engineer
Responsible for the administration of a small full service municipality, including water, wastewater, police, streets, parks, housing authority, city planning, building inspection and library. Project Manager for the planning and construction of expansion of water and wastewater treatment facilities, including regionalization.

City of Madera, California
City Engineer/Planner
Responsible for the City engineering, Planning Department, and Building Inspection.

September 1971 – May 1973

Jennings-Bartlett & Associates, Ventura
Project Engineer
Prepared project feasibility studies and design of public and private sector projects, including structural design of commercial buildings.

December 1969 – May 1971

County of Ventura, California
Senior Civil Engineer
In charge of Road Planning Division which included Advanced Planning, Transportation & Traffic Engineering, and Subdivision Review Sections.

December 1968 - December 1969

City of Los Angeles
Department of Water and Power
Civil Engineer
Broad variety of general civil design and planning work, including structural design, water, wastewater, drainage, streets, etc.

June 1963 – December 1968

EDUCATION

Bachelor of Science, Civil Engineering - Los Angeles State College
Graduate work (30 units), Civil Engineering and Business Administration –
University of Southern California and California State University at Los Angeles.

LICENSE

Registered Civil Engineer - California C17413

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Resolution Number 2019 – 02

**A RESOLUTION OF THE BOARD OF COMMISSIONERS
OF THE DEL NORTE SOLID WASTE MANAGEMENT AUTHORITY**

**HONORING BLAKE INSCORE FOR HIS SERVICE & LEADERSHIP
AS CHAIR FOR THE YEARS 2016, 2017 AND 2018**

WHEREAS, BLAKE INSCORE has served as a Commissioner of the Del Norte Solid Waste Management Authority (Authority) since January 16th, 2016; and

WHEREAS, BLAKE INSCORE served three terms as Authority Chair starting August 16th, 2016, the longest continuous reign of any Authority Chair to date; and

WHEREAS, BLAKE INSCORE actively participated in committees to consider ways to reduce the amount of trash in Del Norte's recycling streams, and in outreach efforts to reduce use of plastic bags and to reduce and to promote proper management of hazardous wastes; and

WHEREAS, BLAKE INSCORE served during periods of many significant Authority motions, including actions that:

- Initiated a textile recycling program at the Del Norte County Transfer Station, and
- Extended the transfer station operations agreement with Hambro/WSG including securing an additional 12 years of landfill capacity at Dry Creek Landfill.
- Successfully appealed the Threat/Complexity rating and reduce the WDR Fee associated with the Crescent City Landfill, resulting in an annual savings of \$32,446.
- Allowed stormwater monitoring and reporting at the Crescent City Landfill to be reduced, resulting in an annual savings of approximately \$4,000 each year through 2036.
- Have reduced the proportion of trash and contaminants in Recology Del Norte's recycling programs as described under the Authority's Collections Franchise Agreement
- Enabled erosion and drainage structure repairs at the landfill largely reimbursed through the California Office of Emergency Services.
- Contracted for and completed the repair of sections of the floor and ramp at the Del Norte County Transfer Station.

NOW, THEREFORE, BE IT RESOLVED, that the Del Norte Solid Waste Management Authority Board hereby acknowledges the diligence and dedication Blake Inscore exhibited during his years of service as an Authority Commissioner and Chair.

PASSED AND ADOPTED by the Board of Commissioners of the Del Norte Solid Waste Management Authority Board, County of Del Norte, State of California, this 26th day of February 2019, by the following polled vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

Lori Cowan, Chair

Kyra Seymour, Clerk

6.1

Del Norte Solid Waste Management Authority Work Priorities Fiscal Year 2019 – 2020

File: 231501



Mission Statement (Sept. 2014): The Authority's Mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

Purposes of the Authority (2012):

1. Planning, siting, permitting, developing, constructing, maintaining, managing and providing gate attendants for public disposal sites, transfer stations, and/or sanitary landfills, and planning for and securing the services of necessary non-disposal processing facilities or other options related to recovering discarded resources and processing those materials to increase their value;
2. Preparing, implementing, and providing related monitoring, reporting, updates and revisions for programs of a Regional Agency Integrated Waste Management Plan as required under the California Integrated Waste Management Act of 1989 as amended (California Public Resources Code commencing with section 40050), including programs related to used motor oil, oil filters, and household hazardous wastes and other materials and products banned from mixed waste disposal;
3. Defining and monitoring the service standards for collections of discards in the incorporated and unincorporated area of County and the ability to grant franchises for waste hauling and/or collection and processing of mixed recyclable materials, in its discretion; (*Recology Del Norte provides services under the Collections Franchise Agreement with the Authority*)
4. Exercising all setting and controls on maximum rates to be charged to the public for discard collections services, and solid waste and recycling services in Del Norte County, and other appropriate powers reasonably necessary to carry out the purpose of this Agreement, including securing disposal capacity for Del Norte County residents, agencies, and businesses as required under Public Resources Code sections 41701 and 41703;
5. Developing, adopting, and implementing Ordinances and programs to control and prosecute illegal dumping and blight in Del Norte County associated with solid waste accumulation and storage; and
6. Post-closure maintenance, monitoring, reporting and remediation related to the Crescent City Landfill as required by relevant Orders from the Regional Water Quality Control Board, North Coast Region, the California Department of Resources Recycling and Recovery (CalRecycle) the North Coast Air Quality Management District.

6.2

Del Norte Solid Waste Management Authority Work Priorities Fiscal Year 2019 – 2020

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Legend for symbols used:

-  = Activity to be completed during FY 2019-2020
-  = Authority-adopted plan, contract or grant to comply with law
-  = Fiscal responsibility under guidance of Authority Treasurer
-  = Draft submitted, awaiting agency response
-  = Lower priority activity or only addressed as time and capacity allows
-  = Activity deferred by Authority Board action
-  = Activity completed for FY 2018-2019

This Work Priorities list is a living document. Items may be added as needed due to further direction from the Authority Board, new legislation, regulation or agency action.

Last Updated: **February 2019**

Mandated or Obligatory Ongoing or Future Activities:

1. Del Norte County Transfer Station (TS) Facilities and Operations

-  Schedule appropriate staff to operate and maintain scale and gatehouse operations at the Del Norte County, Klamath and Gasquet transfer stations, including the daily accounting of receipts and transactions at each facility. (Ongoing)
-   Use the permanent HHW Facility at the Transfer Station for annual HHW Collection Event, as well as daily recycling of used motor oil, oil filters, antifreeze, lead acid batteries, paints stains and varnishes, televisions and computer monitors, household batteries, household fats oils & greases, home generated sharps, and residential and commercial fluorescent tubes. (Annual and Daily)
-   Submit necessary forms related to hazardous waste management to the California Department of Toxic Substances Control (DTSC), including form 303 and generator copies of hazardous waste manifests. (Annual)
-  Prepare and submit hazardous waste business plan to the CERS database. (Annual)
-  Submit reports as required by the California Department of Resources Recycling and Recovery (CalRecycle), including quarterly disposal reports, electronic annual reports, and reporting related to management of consumer electronic wastes, appliances, etc. (Annual)
-  Maintain and improve facilities for disposal and recycling facilities at the Klamath and Gasquet transfer stations. Both these facilities are without water or power and have security issues. (Ongoing).
-  Initiate process to develop a small-volume transfer station to provide drop-off recycling and disposal services for the communities in the northern portions of the County, including the Tolowa Dee-ni' Nation, Smith River, and Fort Dick. (Ongoing)
-  Coordinate with the County Department of weights and measures to calibrate and certify the accuracy of the scales used at the Del Norte County Transfer Station. Repair scales as necessary. (Annual)
-   Resubmit Non-Exposure Certification approved for Del Norte County Transfer Station to reduce the level of effort required to comply with the Industrial Stormwater Permit (Annual).
-  Prepare and submit the PCI compliance report to assure that measures are in place to

protect customer credit and debit card information. (Annual, this deferral is costing ~\$60/month)

2. Crescent City Landfill Post-Closure Maintenance

-  Continue working with County staff to monitor gas wells, groundwater wells, surface water sampling points. Authority staff will continue to compile, summarize and analyze data as well as prepare and submit reports to the North Coast Regional Water Quality Control Board (RWQCB) as required under Order 97-90, and as directed by RWQCB staff. (Ongoing through 2035)
-  Continue landfill facility maintenance, erosion repair, and repair of drainage structures. Vegetation control includes semi-annual removal of deep-rooting plants and mowing of surface drainage structures, as well as fence, gate and well repair. Activities will also periodically include regrading, repair to slopes and drainage structures to reduce ponding, as well as revegetating graded areas. (Ongoing through 2035)
-  Apply for reduction in the post-closure multiplier and prepare and submit annual estimate of the post-closure financial liability associated with the Crescent City Landfill to CalRecycle (Annual; ongoing through 2035)
-  Work with RWQCB in the development and revision of Waste Discharge Requirements and Monitoring and Reporting Program to analyze water historical quality monitoring information with the intent of reducing the expense of water quality monitoring during the post-closure maintenance period, which extends until February 2036 (Ongoing until new Monitoring and Reporting Program is approved).
-  Collect and analyze water samples from two new wells (E-4 Shallow and E-4 Deep) installed at the landfill to possibly demonstrate groundwater flow directions are such that water quality impacts associated with the landfill are unlikely to pose a threat to adjacent residential properties. (Ongoing until new Monitoring and Reporting Program is approved).
-  Submit and/or update the Pledge of Revenue Agreement and associated Resolutions affirming that post-closure liabilities associated with the Crescent City Landfill are addressed through a Pledge of Revenue from the Del Norte County Transfer Station. (Ongoing)
-  Work with County staff and contractors to explore compatible and beneficial uses of the landfill property for mitigation activities that could offset impacts of specified County projects. (Ongoing)
-  **Conduct and report on constituent of concern monitoring of landfill groundwater every**

five years. (Next due in August 2019; ongoing through 2035)

-  Work with County Code Enforcement Officer on grant-funded cleanup at the Crescent City Landfill and the placement of traffic barriers to impede future illegal dumping, as well as the production of outreach materials about end-of-life management of campers, recreational vehicles and manufactured homes. (2019)
-  Work with County and Parks representatives to facilitate transfer of a portion of the south end of the landfill property to State Parks in exchange for a portion of Parks property adjacent to the airport. Secure the landfill by repairing fences, gates, barriers, posting 'no trespassing' signs and working with law enforcement and State parks to prevent non-authorized vehicle access to the landfill property. (Ongoing)
- ✓  Prepare and submit landfill gas heat capacity report and other documentation required by the North Coast Air Quality Management District (NCAQMD). The NCAQMD may impose additional requirements based on this report. (Submitted in 2013; ongoing through 2035)
-  Conduct and submit aerial survey of the landfill every five years to document any differential settlement. (Next due in 2021; Ongoing through 2035)
-  Monitor development of laws and regulations pertaining to control of greenhouse and other landfill gas emissions. Research possible actions and funding sources as necessary and appropriate. (Ongoing)

3. Collections Franchise and Collections System Management

-  Negotiate changes to Recology's recycling collection and/or outreach services to reduce the proportion of non-recyclable trash contaminating Del Norte's recycling programs. (2019)
- ✓  Manage Franchise Collections contract with Recology Del Norte to ensure compliance with contract provisions and Service Standards, including annual CPI-based rate adjustments (plus an additional increase of 6.12% under Change Order 16) and negotiating and drafting Change Orders for contractual changes. Coordinate with Recology Del Norte as needed. (Ongoing)
- ✓  Continue to promote workplace recyclables collections with Recology Del Norte, recycling coordinators, the recyclables collection contractor (currently GH Outreach) and processors like Julindra Recycling, including the requirements of the California Commercial Recycling Mandate (AB341). (Ongoing, special report requested by CalRecycle as part of annual reporting)

-  Work with County representatives and Recology Del Norte to plan for and install concrete bases to secure streetside paired trash and recycling bins before such bins are replaced due to rust. (2020)

4. Reuse, Recycling, and Composting

-  Continue, as a rural regional agency, planning, monitoring and reporting programs, activities, and progress on per capita and per employee waste reduction targets under California Integrated Waste Management Act of 1989, as amended, and as administered by the California Department of Resources, Recovery and Recycling (CalRecycle), including the California's Mandatory Commercial Recycling Law (AB341). (Ongoing)
-  Analyze, enhance, expand, develop and support one or more facilities capable of processing locally-generated organic materials for compost or energy production, in Del Norte or one of our adjacent counties in compliance with the Organics Management Infrastructure Planning (SB 1383, AB 1826 and AB 876). (Ongoing)
-  Continue to coordinate, enhance, and promote recycling of used oil, oil filters and antifreeze using grants from the State agency responsible for oil recycling. (Annual and ongoing)
-  Continue to coordinate, enhance, and promote recycling of beverage containers using grants from the State agency responsible for beverage container recycling. (Annual and ongoing)
-  Plan, coordinate, monitor and report on implementation of product stewardship collection programs for carpeting, thermostats, household batteries, paints and stains, and mattresses. Monitor development of regulations related to SB 212 implementing product stewardship programs for sharps and pharmaceuticals. (Ongoing)
-  Provide material support for County recycling collections through GH Outreach. (Ongoing)
-  Provide backyard composting workshops periodically throughout the year. (Ongoing)
-  Support County and City efforts to invite and appoint members to the Del Norte Solid Waste Task Force, who will review and work with staff to complete the five year review of the Regional Agency Integrated Waste Management Plan in coordination with the Del Norte Solid Waste Task Force. (Due by January 2020)

5. Community Cleanup

-  Coordinate fundable cleanup activities under the grant from the US Forest Service. (Ongoing through Aug 31, 2021)
-  Coordinate collection events for Christmas trees, yard debris, household hazardous wastes and other items or materials as opportunities arise (Ongoing)
-  Coordinate and support beach, river and neighborhood cleanup activities. (Ongoing)
-  Support, help organize and promote Tansy Games event to increase awareness and eradication of tansy ragwort. (2019)
-  Manage and direct use of the twenty-five Authority-directed bin pulls to support community cleanup activities. (Annual)

6. Education and Public Outreach

-  Prepare outreach materials to promote program activities, events and services including print ads, radio ads, posters, public service announcements, handouts and flyers as well as collections billing inserts promoting waste reduction, reuse, repair, composting, hazard reduction, and proper disposal. (Ongoing)
-  Promote waste prevention, reuse, composting and recycling through the Del Norte County Fair and other community events. (Annual)
-  Continue to provide presentations to community groups and classrooms as requested. (Ongoing)
-  Respond to telephone, fax, and e-mail requests for information and/or complaints regarding services and rates for Authority facilities, programs, and those of its contractors. Such inquiries may address materials such as hazardous materials, what materials are recyclable or acceptable as brush, outdated medicines, asbestos, and other materials requiring special handling. (Ongoing)
-  Update website as needed and upload meeting agenda and minutes. (Monthly & Ongoing)
-  Advocate for legislative and regulatory initiatives extending producer responsibilities for end of life product management to reduce Authority costs for managing discards -

especially hazardous materials, products or materials banned from disposal, as well as products or materials requiring special handling including marine flares, sharps, fluorescent tubes and household batteries. (Ongoing)

- ☞ Work with the California Product Stewardship Council (CPSC) to promote and establish Extended Producer Responsibility and Take Back programs, such as the Refuel Your Fun campaign promoting refillable propane canisters. (Ongoing)
- ☞ Provide support to the Del Norte Solid Waste Task Force to promote outreach and education, waste reduction, reuse, composting, recycling and related activities. The Task Force currently has one member. Additional appointments will be needed for the Task Force to meet with a quorum. (Ongoing)

Work with the Crescent City Harbor District, US Coast Guard, Del Norte County Sheriff's office, other local representatives and related state agencies to develop strategies to safely manage expired marine flares. (Ongoing)

7. Local Regulations, Ordinances, Plans and Enforcement

- ☞ Work with County and City Building and Planning Departments regarding review of Materials Management Plans associated with construction and demolition permits in Del Norte County. (Ongoing)
- ☞ Administer Code Enforcement and related Blight Abatement and Cleanup activities through the County's Code Enforcement Officer until such time as these functions are incorporated into relevant City and County Ordinances. (Ongoing)
- ☞ Work with County Code Enforcement Officer to develop County Ordinance for increased penalties for vehicular trespass and dumping on specified County properties including the Crescent City Landfill. (2019)

8. Public Meetings, Budgets, Funding and Fiscal Oversight

- ☞ Develop annual budgets, tracking and reporting expenditures and revenues accordingly. (Annual and ongoing)
- ☞ Prepare and distribute agendas, public hearing notices, minutes, resolutions, ordinances, and related staff reports using the Authority website and other means in compliance with public meeting laws and related agreements and by-laws. (Ongoing)
- ☞ Prepare and submit necessary reports and payments related to post-employment retirement (OPEB) benefits and funding. (Annual)

-  Prepare and submit necessary reports related to General Accounting Board Standards Board Statements Numbers 45 and 68. (Annual)
-  Work with contractor to complete the annual agency audit report and respond according to recommendations and Board direction. (Annual)
-  Track charge customer accounts and payments, send out monthly statements, assess late charges, and refer past-due accounts to collections under adopted policies. (Ongoing)
-  Solicit, negotiate and administer Del Norte Solid Waste Management Authority and Abandoned Vehicle Abatement Service Authority contracts as necessary. (Ongoing) (The Waste Authority Board also serves as Abandoned Vehicle Abatement Authority.)

9. Personnel and Staffing

-  Work with employees and union representatives as needed to address issues covered under the Memorandum of Understanding with the Del Norte Solid Waste Management Authority Employees Association. (Current agreement expires on June 30, 2019)
-  Recruiting and hiring a full complement of staff according to the adopted staffing chart, including hiring and training refuse site attendants and relief workers for the Del Norte County Transfer Station, as well as the Gasquet and Klamath container sites. (Ongoing)
-  Training staff through regular meetings, workshops, in-service training, annual HAZWOPER (Hazardous Waste Operations) refreshers, educational and/or on-line courses and conferences. (Monthly staff safety meetings and Ongoing)
-  Develop and maintain partnerships with Del Norte County and City departments to efficiently deliver services, including payments to the Interfund Cost Plan to pay for County personnel, auditing, and information technology services. (Ongoing)

10. Other Responsibilities and Activities

-  Provide collection and consolidation services as needed for public home-generated sharps drop-off points. (Ongoing)
-  Continue participation in the North Coast Recycling Market Development Zone

(including Humboldt and Del Norte Counties), an enterprise zone promoting recycling market development and development of recovery-based enterprises through technical assistance services and financing opportunities. (Ongoing)

- ☒ Obtain and maintain equipment, signage, supplies and software for monitoring, reporting, scale management, servicing, outreach and collection event activities. (Ongoing)
- ☒ Provide timely analysis and/or recommendations for Board actions or letters regarding legislation and/or regulations which pertain to Authority activities or programs, including coordination with statewide groups such as the Environmental Services JPA of the Regional Council of Rural Counties or the California Resource Recovery Association. (Ongoing)
- ☒ Providing professional assessment and analysis of how other jurisdictions have addressed the issues and concerns identified by the Authority Board, including obtaining model requests for proposals, agreements and/or ordinances. (As needed)

Deferred Discretionary Activities:

- ⊗ Submit application, fees, print forms and conduct training necessary to provide public scale services at the Del Norte County Transfer Station. (Pending, deferred at present)
- ☒ Work cooperatively with the Humboldt Waste Management Authority for regional promotion of waste prevention, reuse, repair, composting and recycling. (Ongoing)
- ☒ Apply for and administer additional competitive grants to support local and/or regional programs as opportunities arise. (Deferred)
- ☒ Monitor and report on Authority and County implementation of procurement policies promoting the procurement and use of reusable, recyclable, and recycled-content products. (Ongoing)

Deferred Activities associated with Resource Recovery Infrastructure and Recycling Market Development:

- ☒ Through the North Coast Cooperative for Recycling Infrastructure Development (Coop), support expansion of reuse, recycling, and compost processors and manufacturers in Del Norte and Humboldt counties to bolster regional markets for recovered materials. (Ongoing)

-  Use the Coop as a forum for reducing overall program costs by sharing resources and personnel, or storing and consolidating recovered materials at public facilities as opportunities arise. (Ongoing)

-  Develop a plan for the Resource Recovery Park property adjacent to the Del Norte County Transfer Station.

	Date	January	February	March	April	May	June
Order bottles							
TS Maintenance			Check fire extinguishers				Mon, Gopher control
LF Maintenance							Spring Mow and Drainage
LF Groundwater							
LF Surface water							
LF Leachate							
Gas Wells							
Reports - RWOCB							
LEA							
CallRecycle							
Publications							
Community Events							

	Date	July	August	September	October	November	December
Order bottles							
TS Maintenance							
LF Maintenance							
LF Groundwater							
Surface water							
Leachate							
Gas Wells							
Reports - RWOCB							
LEA							
CallRecycle							
Publications							
Community Events							

Referenced Documents
 RWOCB Permit 08-44-066
 RWOCB Monitoring and Reporting Program under Order 37-90
 Crescent City Landfill Final Closure and Post-closure Maintenance Plan, Amendment 1
 Leachate Closure Mitigation & Monitoring Program
 Del Norte County Station Transfer & Processing Report, including the Stormwater Pollution Prevention Plan

Additional Responsibilities:
 Constituent of Concern Monitoring - Summer 2019
 4/7/2020 DNC Transfer Station
 7/31/2018 CC Landfill
 3/31/2018 Landfill Non-water CAP

LEA Permit Review Reports:
 4/7/2020 DNC Transfer Station
 7/31/2018 CC Landfill
 3/31/2018 Landfill Non-water CAP

Del Norte Solid Waste Management Authority Organizational Chart February 2019

Authority Board of Commissioners



Lori Cowan, Chair Jason Greenough, Vice-Chair
Chris Howard Blake Inscore
Public Member: Eli Naffah, Secretary

Tedd Ward, M.S.
Director

Martha Rice
Black & Rice
Legal Counsel

Kyra Seymour
Facilities & Programs
Coordinator

Richard D. Taylor, CPA
Authority Treasurer

Katherine Brewer
Administrative
Assistant - Solid Waste

Haley Smith
Account Clerk -
Solid Waste

Refuse Site Attendants:

Rita Schmitt
Bonnie Smith
Darren Davis
Michael McLellan
Jeffrey Mathison
(vacancy)



Del Norte Solid Waste Management Authority

1700 State Street, Crescent City, CA 95531
Phone (707) 465-1100 Fax (707) 465-1300
www.recycledelnorte.ca.gov

The Authority's mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

Staff Report

Date: 20 February 2019
To: Commissioners of the Del Norte Solid Waste Management Authority
From: Tedd Ward, M.S. - Director 
File Number: 120502 - Legislation
Topic: Guiding Principles for Legislative Advocacy

Recommendation: That the Board consider, possibly revise, and adopt the attached Guiding Principles. Staff understand how vital it is to have agency advocacy directed and approved by the Commissioners. Any advocacy communications sent by Authority staff must be approved, and preferably signed by the Chair, if it is impractical for the Authority Board to approve such prior to sending. The Vice Chair may sign or approve such advocacy communications if the Chair is not available. Such advocacy communications will be included in agenda attachments for the following Authority Board meeting.

Background: This past year the Board directed staff to advocate regarding legislation being considered that could impact this agency, its members or its programs. To become more engaged in these discussions, the Director has attended and made presentation at the Environmental Services Joint Powers Authority of the Regional Council of Rural Counties. The Director also serves as Treasurer and Board member of the California Product Stewardship Council, and has been a long-time member of the California Resource Recovery Association, Californians Against Waste, and the Container Recycling Institute. Positions adopted by these and other groups are considered as potential advocacy positions for this agency, pending Board approval on a case-by-case basis.

Analysis: As proposed legislation works its way through committee hearings, there can be multiple opportunities to comment on issues to support or areas of concern. Those comments are generally directed to the members of those committees in addition to our legislative representatives. The process of drafting and presenting letters detailing our agency's specific concerns can only be accomplished at Authority meetings, which are generally once a month. Legislation can change drastically - and on occasion over a period of just a few days - making the potential to comment effectively especially challenging.

Del Norte Solid Waste Management Authority

Guiding Principles for Legislative Advocacy

Last revised: 26 February 2019

Last approved: _____

The Authority's mission is the management of Del Norte County solid waste and recyclable material in an environmentally sound, cost-effective, efficient and safe manner while ensuring 100% regulatory compliance with law.

As a joint powers authority of the City of Crescent City and the County of Del Norte, the Del Norte Solid Waste Management Authority will only advocate on legislation and regulations related to its areas of responsibility or governance - including policies, facilities and contracts for management of solid wastes, recyclable and compostable materials, special wastes, hazardous wastes.

These Guiding Principles are adopted with the intention that staff of the Del Norte Solid Waste Management Authority may communicate and advocate how these Principles could be supported or undermined by proposed law and/or regulation. In this way, staff may communicate the policy intentions of the Authority in circumstances for which having the Board review and approve advocacy communications related to such legislation or proposed regulations is impractical.

Any advocacy communications sent by Authority staff must be approved, and preferably signed by the Chair, if it is not practical for the Authority Board to approve such prior to sending. The Vice Chair may sign or approve such advocacy communications if the Chair is not available. Such advocacy communications will be included in agenda attachments for the following Authority Board meeting.

SOLID WASTE MANAGEMENT AND RECYCLING

1. **Bans.** The Authority supports advanced statewide planning and infrastructure for convenient identification and recovery of all materials and products prior to any actions banning products or materials from California landfill disposal or requiring separate handling or processing. The Authority supports active contributions from manufacturers and retailers to establish programs to cover the costs for disposal, recycling, special handling, and/or any public education required for their end-of-life products, before any such disposal bans are implemented.



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2. **Disposal Mandates.** The Authority supports appropriate tools for municipalities to achieve statewide waste diversion goals, including extended producer responsibility, an easing of the permitting restrictions for organic waste processes and other solid waste activities, model program guidelines, and increased funding. The Authority opposes regulatory requirements that do not consider existing infrastructure and capacity and the economic feasibility of new facilities, and that do not provide the flexibility for phasing-in various regions and areas of the state, especially in rural counties.
3. **Electronic and Universal Waste.** The Authority supports the proper disposal of electronic and universal waste through programs that place the cost of compliance on manufacturers and consumers rather than on county-operated waste management programs.
4. **Extended Producer Responsibility.** The Authority supports producer responsibility for financing and arranging the collection and recycling of their products at end-of-life, preferably through product take-back by the manufacturers/retailers. The Authority expects that for every producer responsibility program authorizing daily collection of advance disposal or recycling fees at the point of purchase provide at least one collection point in each County with daily service supported by those fees.
5. **Financing State Solid Waste Disposal Programs.** The Authority supports a wide range of options to reform the financing mechanisms for the management of solid waste programs, including: increasing the current tipping fee as a temporary measure; applying new solid waste management fees on aspects of the waste stream that currently have no levies; reforming the programs that CalRecycle manages to limit costs; or, a combination of these options. The Authority opposes an increase in the Tipping Fee or other funding mechanisms for projects and programs that are not part of a direct effort to manage and reduce the overall amount of solid waste.
6. **Jurisdictional Compliance.** The Authority supports using program-based criteria to determine jurisdictional compliance with statutory waste diversion requirements that incorporate rural considerations. The Authority opposes numerical justifications on program implementation that do not include rural considerations.

7. **Permitting.** The Authority supports “tiered” solid waste facility permitting and operating requirements with reduced administrative and operational requirements that are commensurate with the limited environmental and public health risks associated with small-volume facility operation in low-density population areas.

OTHER ISSUES

Invasive Species. The Authority supports State and federal funding to increase public awareness of invasive species as well as to facilitate their removal and reduce harmful economic and environmental impacts that result from the spread of these species.

Control of Greenhouse Gas Emissions and Carbon Sequestration. The Authority supports efforts to control greenhouse gas emissions and sequester carbon, including the processing and composting of yard debris to reduce the generation of methane, and the application of compost and mulch to increase the carbon sequestration on agricultural lands. The Authority supports a State financial assistance program to enable local agencies to comply with GHG regulations.

Regulatory Compliance. The Authority encourages flexibility for economically disadvantaged and rural areas in state regulatory programs including exemptions and tiered compliance schedules based on appropriate, regulation-specific parameters. The Authority also supports the development of pilot programs in and for rural areas to explore and demonstrate approaches to address aspects of resource recovery or solid waste management.

You are Invited to compete in Del Norte County's first

TANSY GAMES

What is Tansy? Tansy Ragwort (*Senecia jacobaea*) is a noxious weed which can be lethal to cattle, horses, and sheep. Each plant can grow to as tall as 6 or 7 feet, and in spring and early summer, tansy is easily identified by its bright yellow flowers.

Why is Tansy a problem? Cows, horses, and other livestock feeding on tansy can get ill or even die. Though tansy is poisonous, animals are known to acquire a taste for it, nibbling a little and then searching for more. After the leaves have browned, they lose their bitter taste, and animals will eat these with even less hesitation.

Removing Tansy is the Law. Let's make it fun. County Ordinance Number 77-48, the 'Tansy Control Ordinance,' essentially requires people to remove Tansy Ragwort from their property. Del Norte County residents can dispose of properly bagged tansy for no charge at the Del Norte County Transfer Station.

Tansy disposal is Free for Del Norte County customers all year round. The Del Norte Solid Waste Management Authority pays the disposal costs for all tansy ragwort separately disposed at the Del Norte County Transfer Station. The easiest time of the year to do this is when tansy is blooming with its bright yellow flowers. The Tansy Games are intended to raise awareness that removing tansy and other invasive species from properties is the right thing to do.

What are the Tansy Games? The Tansy Games are a contest to encourage all interested able-bodied people to gather and dispose of tansy ragwort at the Del Norte County Transfer Station during the contest period. The total amount of tansy ragwort disposed by registered teams and individuals will be calculated and prizes awarded for the most weight removed.

When are the Tansy Games? The Tansy Games will begin on Monday July 22nd and run through Sunday August 11, 2019.

Youth Teams are Invited. Future Farmers of America, 4H, Scout Troops, school clubs and classroom teams are all encouraged to form a team. Youth teams can include names of up to 40 youth (under 16 years of age), and up to four adults and four vehicles. Teams can get forms to sign up here:

[\(website link #1\)](#)

Adult Teams are Also Welcomed. Adult teams can include up to eight adults and four vehicles. Teams can get forms to sign up here: [\(website link #2\)](#)

Can I compete as an individual? Yes. Individuals who want to compete in the Tansy Games just need to show the gate attendant identification so their name can be noted on the bottom of each Tansy load so we can total the amount of Tansy disposed at the end of the Tansy Games.

Can I collect tansy from properties that I don't own? Only if you get permission from the property owner. Individuals and teams are responsible for getting permission to gather tansy from property owners. State and National Park lands and Pacific Shores are off limits to contestants and will be "de-tansyed" by "professionals". (Yes there are professional tansy removers, but it's seasonal work and we don't recommend it as a career choice. Trust us on this.)

What are the prizes? Think of the prizes as gifts: wrapped and you won't know until you open them. Makes the games more exciting, don't ya' think? How 'bout the gift of comradery? Of knowing you're helping your community? You're saving the lives of horses, cows, adorable goats and lambs? You're working outdoors in a beautiful place with friends and fellow members of our community, you're doing a good deed, you can write your volunteerism on your college application, the AG Department Director may even be coerced into performing The Tansy Dance (no guarantees on that one). Ok, ok. Prizes will be announced at a later date. Keeps it interesting, huh?

See you at The Tansy Games!



How to Dispose Tansy Ragwort in Del Norte County

Thank you for doing your part to reduce the threat of tansy ragwort to Del Norte county's horses and livestock. Before bringing tansy ragwort to the Del Norte County Transfer Station, please do all of the following to reduce the spread of this noxious weed:

1. Best practice is to remove the whole tansy plant, and enclose all flowers or seed heads (if any) in a plastic bag.
2. Bag, tarp, or wrap all tansy plants to prevent the spread of seeds and leaves during transport.
3. When you arrive at the Del Norte County Transfer Station, tell the gate attendant that you have tansy. They will tell you where to unload.
4. The gate attendant will waive the fees for the tansy ragwort you deliver to the Del Norte County Transfer Station only if the tansy is not mixed with any other waste material.

Please note that tansy and other invasive plants such as english ivy, pampas grass and scotch broom are disposed as wastes to prevent their seeds from contaminating compost produced from grass, leaves and brush delivered to the Del Norte County Transfer Station.



Tedd Ward

From: Pogue, Clint <clint_pogue@fws.gov>
Sent: Wednesday, February 13, 2019 12:41 PM
To: Tedd Ward
Subject: Possible dumpster to support Scotch Broom Bash 2019

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Tedd,

Thank you for your continued support of the Scotch Broom Bash over the years. We plan on continuing this event in 2019 and I wanted to reach out to see if the Del Norte Solid Waste Management Authority would be interested in allocating a dumpster to support the Bash. I remember that the Authority Board needs to approve dumpster allocation so I wanted to reach out and hopefully make contact before your next meeting. The details for this year are still being determined, but the amount of broom removed and the general location (Pacific Shores) will be the same. I'll be meeting with one of the other coordinators of the Bash on Tuesday and will likely have more details after that.

If you have any questions or would like to discuss, feel free to call me at my direct line: (707) 825-5122

Thanks again!

Clint

--
Clint Pogue, Botanist
U.S. Fish and Wildlife Service
Ecological Services - AFWO
1655 Heindon Road
Arcata, CA 95521

phone: 707.822.7201
fax: 707.822.8411
email: clint_pogue@fws.gov

Criteria and Policy for the allocation of Authority-directed Complimentary bin pulls

Adopted: 09 July 2014

Files: 031205, 180510

1. **Assets subject to this policy**

The Del Norte Solid Waste Management Authority, as the public agency responsible for oversight of the collections franchise with Recology Del Norte, may direct the deployment of up to twenty (20) bin pulls of up to 40 cubic yards during each calendar year, as described in the Franchise Collections Agreement with Recology Del Norte, Exhibit B2, section C.3. In addition, the Authority may also designate any number of Authority-directed Pull-charge bin services, for which the bin charge will be for 'Collection, hauling, and unloading bins as directed' charge rather than the fee for hauling and disposal of a specific size bin. In all of these cases, the charges for disposal will be assessed and paid ***unless Hambro/WSG agrees to waive their fees***, which they may or may not do on a case-by-case basis. The following Criteria and Policy are intended to clarify how such allocations may be considered and determined.

Policy: The Authority Board will allocate bin pulls according to the criteria listed below based on written requests and recommendations presented at regular Authority Board meetings.

Criteria: The following criteria shall be considered and/or discussed when the Authority takes action directing complimentary or directed bin pulls:

- **Beach, river, and community cleanup events to which the public is invited**
- **Cleanup activities on public property as the highest priority**
- **Support of high-profile community events open to the public that include both disposal and recycling, and/or related outreach activities**
- **Coordinated cleanup activities on prioritized private properties that have been designated by the City, County, or other public agency as blighted with accumulated solid waste**
- **Coordinated neighborhood cleanup events in cases where a specific written request is presented for the Authority Board's consideration**
- **Activities that have great potential to reduce solid-waste-related blight, reduce illegal disposal of solid or hazardous wastes, or increase recycling or composting**
- **The ability for the requesting party to pay for disposal and maintain security and supervision for each bin**
- **The remaining number of bins to be allocated each year**

As these bins are allocated by calendar year, Authority Staff are to present the remaining number of complimentary bin pulls remaining at the regular Authority Board



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Staff Report

Date: 20 February 2019
To: Commissioners of the Del Norte Solid Waste Management Authority
From: Tedd Ward, M.S. - Director *Tedd*
File Number: 161806 – Battery Take Back
Attachments: 'Recycle Batteries for Free' flyer

Topic: Possible development of an Extended Producer Responsibility Ordinance requiring producer-funded recycling of all household batteries wherever such are sold

Recommendation: That the Board direct staff to work with the California Product Stewardship Council (CPSC) and legal counsel to draft an Extended Producer Responsibility Ordinance requiring producer-funded recycling of all household batteries wherever such are sold. This Ordinance would be considered at a future Authority meeting and would need to be separately approved by the Crescent City Council and the Del Norte County Board of Supervisors.

Background: Since 2006, it has been illegal to disposal of household batteries in the trash. Also since 2006, cellphone retailers have been required to have a receptacle for recycling cellphones and rechargeable batteries. Most communities in California have no program for recycling single-use batteries, though they have been banned from disposal due to hazardous materials contained within.

The greatest potential hazard of concern from batteries is a rapid discharge from lithium ion battery type which can generate enough instantaneous heat to self-ignite. For this reason, all batteries must be taped on one end before recycling. Other battery hazards are associated with heavy metals like cadmium and mercury, and to a lesser extent the caustic electrolyte which can cause old batteries to corrode and leak. Current labelling methods make it very challenging for most customers to look at a battery and identify the battery chemistry. Furthermore, this confusion is increasing the hazard level with the introduction of single-use lithium batteries. Until recently, most single-use batteries have been alkaline or cadmium based.



6.6

Leveraging resources from a CalRecycle grant and developed in partnership with CPSC, since 2011 Del Norte County has had the most comprehensive and convenient recycling program in California (if not the nation) for all household batteries, including single-use batteries.

Partnering with Call2Recycle, an industry-funded group that recycles rechargeable batteries and cell phones, Authority staff worked with local retailers to provide the retailers with boxes to receive taped and bagged household batteries. Customers bring in household batteries taped on one end, and when the box reaches its limit (usually 20 pounds) the retailer mails the box off for recycling. When the box is scanned by the common carrier for pickup and recycling, Call2Recycle mails another empty box to that retailer. Apart from the minimal staff time to receive the batteries and mail back the box, there is no cost to the retailer.

Analysis: When the program first started, there were 23 stores in Del Norte County that sold batteries and also voluntarily participated in the program. Batteries brought to the Del Norte County Transfer Station were also recycled, and this continues to be the location with the greatest weight and volume of batteries recycled. Today, there 12 locations that both sell and recycle batteries in addition to battery recycling from the Del Norte County Transfer Station. Of the stores that dropped out of the voluntary program, most were associated with the small numbers of batteries sold and brought to that store for recycling.

Del Norte County is well positioned to create a program where it is as easy to properly recycle batteries as it is to purchase them.

Alternatives: The Board could do the following to address the problems associated with single-use and lithium ion batteries:

1. Take no action and continue to wait for a statewide solution.
2. Approve staff's recommendation and direct staff to work with CPSC to develop an ordinance requiring a producer-funded recycling program for all household batteries and lithium ion batteries, wherever such are sold within the county.
3. Direct staff to evaluate other alternatives and report back to the Board on staff's findings.

Related Issues: Creating a producer funded collection and recycling program within Del Norte County and the City of Crescent City would shift costs related to household battery management currently incurred by the Authority to the producers of those products. When producers of products experience the true costs of managing the end of life of those products, they tend to move toward greener design.

Recycle batteries for free, at these Del Norte County locations:



Don't forget to tape your terminals

Crescent City

Crescent Ace Hardware
Home Depot
Julindra Recycling
Walgreens
Safeway
Del Norte County Transfer Station
Park City Superette
US Cellular

Fort Dick

Fort Dick Market

Klamath

Pem-Mey Fuel Mart
Yurok Tribal Office

Along Highway 199

Hiouchi Hamlet
Gasquet Market





To recycle batteries, follow these steps:

Completely tape at least one end of each battery to reduce risk of fire.

Use masking, electrical or duct tape to cover at least one terminal of EVERY battery. You may also use the packaging from a new set of batteries to package used batteries of the same type, so long as the terminals of each battery are covered securely. For button cells, coin cells, or hearing aid batteries, place tape entirely over the smaller end of each battery or tape the entire battery. Corroded batteries should be stored individually in a plastic bag.



Safely store your household batteries.

Taped household batteries may be safely stored in a plastic bucket, bag, or tub. Do not store untaped, loose batteries mixed together in the same container, as this creates a fire hazard.



Bring your taped batteries to one of the locations on the other side of this flyer.

Each of the locations which have volunteered to take back your batteries for recycling are required to make sure each battery has taped terminals or is placed in a separate plastic bag. You can save time by taping each of your

* Household batteries include all batteries which are not lead-acid batteries, car, boat, or motorcycle batteries. Household batteries include watch and button cells, alkaline batteries, and all rechargeable household batteries, including battery packs from cordless power tools or computers.