

# BOARD OF COMMISSIONERS HILARY COOPER KRIS HOLSTROM LANCE WARING

### REGULAR MEETING AGENDA Wednesday, June 26, 2019

Norwood Public Library 1455 Pinion St, Norwood CO. 81423

- 1. 9:30 am Call to order.
- 2. Review of Agenda.
- 3. Calendar Review.
  - a. Calendar Review.

#### 4. 9:35 am CONSENT AGENDA

- a. Approval of Minutes: May 29, 2019 and June 12, 2019.
- b. Approval of the appointment of Sara Rasmussen to replace the Strong Start's Early Childhood Advisory Panel (ECAP) Norwood representative due to a resignation.
- c. Approval of the appointment of Denise Scanlon to the Telluride Regional Airport Authority as the County at Large alternate member.
- d. Approval of Chair's signature on an Annual Audit Extension Request not to exceed 60 days.
- e. Acceptance for the Building Department Reports April May 2019
- f. Approval of Chair's signature on a Memorandum of Understanding between the San Miguel Basin Fair Board and the San Miguel Basin CSU Extension office.
- g. Other, as needed.

#### 5. 9:40 am ADMINISTRATIVE MATTERS:

a. 9:30 a.m. Recognition of Alan Hatfield for 20 years of service on the Road and Bridge Dept.

5 mins Ryan Righetti, County Road and Bridge Superintendent

b. 9:35 a.m. Update with Coyote Enterprises on septic and other related issues in the County.

15 mins Rebecca and Steve Rogers, Coyote Enterprises LLC

c. 9:50 a.m. Update with the Vegetation Control Manager.

10 mins Ron Mabry, Vegetation Control Manager

d. 10:00 a.m. Update with the Colorado Department of Transportation.
90 mins Michael McVaugh, Region Transportation Director

#### 6. 11:35 am ADMINISTRATIVE MATTERS

- a. Discussion of the proposed 2020 Legislative Issues.
   15 mins
- b. Other, as needed.

#### 7. <u>11:50 am SOCIAL SERVICES MATTERS:</u>

a. Approval of Chair's signature on Social Services Department Balance Sheet April 2019, Earned Revenue and Expenditures April 2019, Expenditures through Electronic Benefit Transfers May 2019, Check Register for the Month of May 2019, County Allocation/MOE Report APR-2019, and 2019 Caseload Report/MOTION

15 mins Carol Friedrich, County Social Services Director

- b. 12:05 p.m.- 1:00 p.m. Lunch
- c. Other, as needed.

#### 8. 1:00 pm GOVERNMENT AFFAIRS/NATURAL RESOURCES

- a. Discussion of the Agricultural Greenhouse Gas Inventory Report.
   60 mins Mark Easter, Mark Easter Consulting LLC.
- b. Update with County Government Affairs/Natural Resources Director.
   15 mins Lynn Padgett, Government Affairs/Natural Resource Director
- c. Other, as needed.

#### 9. 2:15 pm ADMINISTRATORS REPORT/Lynn Black (5mins)

- a. Update with County Administrator
- b. Other, as needed.

#### 10. 2:20 pm COMMISSIONER AND PUBLIC DISCUSSION (15mins)

- a. Public Discussion.
- b. Update on Outside Meetings
  - 1. Lance Waring
  - 2. Kris Holstrom Telluride Regional Airport, Electric Bus demo
  - 3. Hilary Cooper GMUG Working draft webinar
- c. Website posting and press releases
- d. General Discussion.

#### 11. 2:30 pm ATTORNEY MATTERS /Amy Markwell (15mins)

(Any of these items may involve an Executive Session C.R.S 24-6-402)

- a. Update on Litigation
- b. Other, as needed.
- 12. 2:45 pm Adjournment.

NOTE: This agenda is subject to change, including the addition of items up to 24 hours in advance or the deletion of items at any time. All times are approximate. The County Manager reports may include administrative items not listed. Regular Meetings, Public Hearings, and Special Meetings are recorded, and ACTION MAY BE TAKEN ON ANY ITEM. Formal Action cannot be taken at Work Sessions. For further information, contact the County Administration office at 970-728-3174. If special accommodations are necessary per ADA, contact 970-728-3174 prior to the meeting.

Packet materials will be available on the San Miguel County website at www.sanmiguelcountyco.gov no later than 5:00 pm on the Friday before the meeting.

Changes to the meeting and work session schedule will be officially posted at the **designated posting place** for BOCC notices located at the front entrance to the County Offices, located in the Miramonte Building First Floor, 333 West Colorado Avenue, Telluride CO. Agenda Distribution:

Miramonte Bldg. Courthouse Bldg. Glockson Bldg. Town of Telluride Town of Mountain Village Egnar Post Office Norwood Post Office Ophir Post Office Placerville Post Office Town of Norwood KOTO News Norwood Post Telluride Daily Planet The Watch



AGENDA ITEM - 3.a.

TITLE:

Calendar Review.

Presented by: Time needed:

**PREPARED BY:** 

#### **RECOMMENDED ACTION/MOTION:**

#### **INTRODUCTION/BACKGROUND:**

See attached.

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

#### **ATTACHMENTS:** Description Calendar Review

Upload Date 6/21/2019

# <u>June</u> 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	01
						<u>CC4CA</u> <u>Steering</u> <u>Committee</u> <u>Phone Call</u>
02	03	04	05	06	07	08
	<u>CCI Summer</u> <u>Conference</u>	<u>County</u> <u>Commissioner</u> <u>Discussion-</u> <u>Canceled'</u> <u>CCI Summer</u> <u>Conference</u> <u>Colorado Soil</u> <u>Health</u> <u>Coalition call</u>	<u>CCI Summer</u> <u>Conference</u> <u>CCAT Summer</u> <u>Retreat</u>	<u>CCAT Summer</u> <u>Retreat</u>	<u>CC4CA</u> <u>Steering</u> <u>Committee call</u>	<u>Lone Cone</u> <u>Library Grand</u> <u>Opening</u>
09	10	11	12	13	14	15
<u>Recycle</u> <u>Colorado</u> <u>Annual</u> <u>Conference</u>	<u>Recycle Colorado Annual Conference</u>	<u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Recycle</u> <u>Colorado</u> <u>Annual</u> <u>Conference</u>	Special BOCC Meeting County Commissioner Discussion State Land Board and SMC Commissioner Discussion	<u>Gunnison</u> <u>Valley</u> <u>Transportation</u> <u>Planning</u> <u>Region -</u> <u>Region 10</u> <u>SMART Board</u> <u>Meeting</u>		
16		18	19	20	21	222
	BOCC Special Meeting -Final Interview for the Public Health Director	<u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health</u> <u>Coalition call</u>	<u>County</u> <u>Commissioner</u> <u>Meeting</u>	<u>Telluride</u> <u>Regional</u> <u>Airport</u> <u>Authority</u>		•
23	24	25	26	27	28	29
		Special BOCC Meeting Ext Session - Manager Search Early Childhood Advisory Panel Public Reception for Finalists County Manager	<u>County</u> <u>Commissioner</u> <u>Meeting</u>	BLM Uncompahgre Proposed Resource Management Plan and Final Environmental Impact Statement		
30	01	02	03	04	05	06

Select Language

# <u>July</u> 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	01	<b>O2</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health</u> <u>Coalition call</u>	03	04	<b>05</b> <u>CC4CA</u> <u>Steering</u> <u>Committee call</u>	06
07	08	<b>09</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u>	10	11 <u>Club 20 -</u> <u>Summer Policy</u> <u>Committee</u> <u>Meetings</u> <u>SMART Board</u> <u>Meeting</u>	<b>12</b> <u>Summer Policy</u> <u>Committee</u> <u>Meetings</u>	13
14	15	16 <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health</u> <u>Coalition call</u> <u>GMUG</u> <u>Working Draft</u> <u>Plan Open</u> <u>House</u>	<b>17</b> <u>County</u> <u>Commissioner</u> <u>Meeting</u>	<b>18</b> <u>Regional</u> <u>Airport</u> <u>Authority</u>	19	20
21	22	<b>23</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u>	24	<b>25</b> <u>Club 20 -</u> <u>Summer Policy</u> <u>Committee</u> <u>Meeting</u>	<b>26</b> <u>Summer Policy</u> <u>Committee</u> <u>Meeting</u>	27
28	29	<b>30</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health</u> <u>Coalition call</u>	<b>31</b> <u>County</u> <u>Commissioner</u> <u>Meeting</u>	01	02	03

Government Websites by <u>CivicPlus®</u>

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#### <u>August</u>

<u>2019</u>

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	01	<b>02</b> <u>CC4CA Steering</u> <u>Committee call</u>	03
04	<b>05</b> <u>Special BOCC</u> <u>Meeting -</u> <u>County Board of</u> <u>Equalization</u> <u>Final Decisions</u>	<b>06</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>GMUG Mine</u> <u>Tours</u>	<b>07</b> <u>County</u> <u>Commissioner</u> <u>Meeting</u> <u>GMUG Mine</u> <u>Tours</u>	<b>O8</b> <u>GMUG Mine Tours</u> <u>SBEADMR</u> <u>Summer</u> <u>Public/Stakeholder</u> <u>Field Trip</u> <u>SMART Board</u> <u>Meeting</u>	<b>09</b> <u>GMUG Mine</u> <u>Tours</u>	10
11	<b>12</b> <u>Inter-</u> <u>Governmental</u> <u>Work Sessions -</u> <u>Host Telluride</u>	<b>13</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health Coalition</u> <u>call</u>		<b>15</b> <u>SBEADMR</u> <u>Summer Best</u> <u>Management</u> <u>Practices Field Trip</u>	16	<b>17</b>
100 cm	19	<b>20</b> <u>County</u> <u>Commissioner</u> <u>Discussion</u>	<b>21</b> <u>County</u> <u>Commissioner</u> <u>Meeting</u>	222	23	24
25	26	27 <u>County</u> <u>Commissioner</u> <u>Discussion</u> <u>Colorado Soil</u> <u>Health Coalition</u> <u>call</u> <u>Early Childhood</u> <u>Advisory Panel</u>	28	<b>29</b> <u>Telluride Mountain</u> <u>Village Owner</u> <u>Association</u> <u>Gondola</u> <u>Committee/</u> <u>Subcommittee</u> <u>Meeting</u>	30	31

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AGENDA ITEM - 4.a.

TITLE:

Approval of Minutes: May 29, 2019 and June 12, 2019.

Presented by: Time needed:

#### **PREPARED BY:**

#### **RECOMMENDED ACTION/MOTION:**

To approve as presented.

#### **INTRODUCTION/BACKGROUND:**

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

#### **ATTACHMENTS:**

Description 5/29/2019 Draft Minutes 6/12/2019 Draft Minutes Upload Date 6/21/2019 6/21/2019

### SAN MIGUEL COUNTY BOARD OF COMMISSIONERS SPECIAL MEETING MINUTES Wednesday, May 29, 2019

Second Floor, Miramonte Building, 333 W Colorado Ave Telluride. Colorado

- Present Kris Holstrom, Chair Hilary Cooper, Vice Chair Lance Waring, Commissioner
- Staff PresentAmy Markwell, County Attorney<br/>Carmen Warfield, Chief Deputy Clerk

#### 1. Call to order.

#### 9:36 a.m.

#### 2. ADMINISTRATIVE MATTERS:

a. Executive Session: Review and give direction to the recruitment agency on final candidates for the County Manager position. (4)(f)

#### Present: Andrew Gorgey, Peckham and McKenney

**MOTION** by Lance Waring to approve going into Executive Session to review and give direction to the recruitment agency on final candidates for the County Manager position (4)(f). **SECONDED** by Hilary Cooper. **PASSED 3-0**.

<u>Note</u>: The County Attorney requested that item 2.a. not have written minutes as it constitutes a privileged attorney-client communication and a statement signed by the attorney and chair is attached. (ATTACHMENT I)

9:36 a.m. Recessed. 10:35 a.m. Reconvened.

Board only discussed the one item in Executive Session it stated.

10:35 a.m. Recessed. 10:40 a.m. Reconvened.

#### 3. PARKS AND OPEN SPACE MATTERS

a. Discussion and Long Range Planning concerning the East End of the Canyon with Cooperative Entities.

Staff Present: Kaye Simonson, Planning Director; Ryan Righetti, County Road, and Bridge Superintendent; Bill Masters, County Sheriff; Janet Kask, County Parks, and Open Space Director; Tonya McCann, County Paralegal

Others Present: Karen Guglielmone, Town of Telluride; , Lance McDonald, Town of Telluride; Matt Zumstein, United States Forest Service; Doug Tooley, County resident; Devon Horntvelt, Idarado Mine; Michael Martton, Telluride Tourism Board; Anne Carlson, Telluride Tourism Board; Bill Masters, County Sheriff; Scott Spielman, USFS

11:02 a.m. Lynn Black, County Administrator, entered the meeting.

**Board Consensus** to form a committee to address the concerns to include Lance Waring, Anne Carlson, Lance McDonald, and Scott Spielman

11:46 a.m. Recessed.

12:29 p.m. Reconvened.

#### 4. ADMINISTRATIVE MATTERS - Continued.

a. Approval by the Board of Commissioners to adopt the San Miguel County Leadership Policies and Practices.

#### Present: Lynn Black, County Administrator

**MOTION** by Hilary Cooper to approve the [San Miguel County Leadership Policies and Practices] with the noted changes. **SECONDED** by Lance Waring. **PASSED 3-0.** 

b. Discussion of reconstituting the San Miguel Daycare and Preschool Association Board.

Present: Amy Markwell, County Attorney

**Board Consensus** to direct staff to have the County Early Childhood Advisory Committee act as the San Miguel Daycare Board with the addition of a Town of Telluride Council member to attend the next meeting on Friday, June 14, 2019, from 1-3 p.m.

- c. Other, as needed.
  - 1. 1<sup>st</sup> request to increase the Counties and Commissioner Acting together (CCAT) annual fee from \$1,000 to \$5,000 for the budget year 2019. 2<sup>nd</sup> Request to increase the Colorado Communities for Climate Action (CC4CA) fka Rocky Mtn. Climate Organization annual fee from \$2,500 to \$5,000 for the budget year 2019.

**MOTION** by Hilary Cooper to approve the increase on both requests. **SECONDED** by Lance Waring. **PASSED 3-0.** 

#### 5. PARKS AND OPEN SPACE MATTERS - Continued.

a. Discussion of potential acquisition of the Ames Structures.

Present: Rob Lopez, Excel Energy; Janet Kask, County Parks, and Open Space Director; Mike Dougherty, neighbor to project; Randy Reece, neighbor to project

**MOTION** by Lance Waring to proceed with the negotiation with Excel Energy to acquire the three structures contingent on a successful financial arrangement. **SECONDED** by Hilary Cooper. **PASSED 3-0.** 

#### 6. Adjournment.

1:33 pm

20190606-BOCC-Audio

Respectfully submitted,

Carmen Warfield, Chief Deputy Clerk

Approved.

SAN MIGUEL COUNTY BOARD OF COMMISSIONERS

Kris Holstrom, Chair

ATTEST:

Lynn M. Black, County Administrator

# SAN MIGUEL COUNTY BOARD OF COMMISSIONERS SPECIAL MEETING MINUTES

### Wednesday, June 12, 2019

335 W Colorado Ave. 1st floor

Telluride, Colorado

- Present Kris Holstrom, Chair Hilary Cooper, Vice Chair Lance Waring, Commissioner
- <u>Staff Present</u> Lynn Black, County Administrator Amy Markwell, County Attorney Carmen Warfield, Chief Deputy Clerk

#### 1. Call to order

9:34 a.m.

- a. Other, as needed.
  - 1. Update on the San Miguel Regional Housing Authority Director hiring process.

Present: Lynn Black, County Administrator

#### 2. ATTORNEY MATTERS

(Any of these items may involve an Executive Session)

- a. Executive Session: Discussion related to a Property Acquisition with a structure, citation (4) (a)(e).
- b. Executive Session: Discussion and request for direction on settlement negotiations (4)(b).

Present: Amy Markwell, County Attorney, Janet Kask, County Parks, and Open Space Director

**MOTION** by Hilary Cooper to go into Executive Session to discuss the related property acquisition with a structure, citation (4)(a)(e) and a discussion and request for direction on a settlement negotiations (4)(b). **SECONDED** by Lance Waring. **PASSED 3-0.** 

<u>Note</u>: The County Attorney requested that item 2.a.and 2.b. not have written minutes as it constitutes a privileged attorney-client communication and a statement signed by the attorney and chair is attached. (<u>ATTACHMENT I</u>)

9:37 a.m. Recessed.

10:39 a.m. Reconvened.

**Board** only discussed the two items it stated in Executive Session.

#### c. Update on Litigation.

- d. Other, as needed.
  - 1. Upcoming State Land Board Meeting this afternoon.
  - 2. Request for board direction to hire an Hearing officer for an upcoming Abatement Hearing in July

Board consensus to hire a hearing officer for the upcoming abatement hearing.

#### 3. Adjournment.

11:02 a.m.

20190612-BOCC-Audio-Special

Respectfully submitted,

APPROVED.

Carmen Warfield, Chief Deputy Clerk

SAN MIGUEL COUNTY BOARD OF COMMISSIONERS

Kris Holstrom, Chair

ATTEST:

Lynn M. Black, County Administrator



AGENDA ITEM - 4.b.

#### TITLE:

Approval of the appointment of Sara Rasmussen to replace the Strong Start's Early Childhood Advisory Panel (ECAP) Norwood representative due to a resignation.

Presented by: Time needed:

#### **PREPARED BY:**

#### **RECOMMENDED ACTION/MOTION:**

To approve as presented.

#### **INTRODUCTION/BACKGROUND:**

see attached.

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

#### **ATTACHMENTS:**

Description Norwood School district replacement request Upload Date 6/20/2019

Strong Start Program PO Box 4216 | 657 W. Colorado St. | Telluride, CO 81435 <u>Coordinator@strongstartstrongcommunity.org</u> | 970.728.5613 www.strongstartstrongcommunity.org



June 19, 2019

San Miguel Board of County Commissioners,

Strong Start's Early Childhood Advisory Panel (ECAP) Norwood representative, David Crews, has resigned from his position as Superintendent of the Norwood School District and therefore will no longer be serving on this Panel as the Norwood representative. David has recommended Sara Rasmussen to replace him. Sara is the Co-Principal of Norwood School District (preschool through 12th grade). Norwood School District Board of Education is in support of this appointment. As ECAP chair, I am requesting your approval of this appointment as required in ECAP by-laws (and ballot language) – "The Board of County Commissioners (BOCC) shall approve the appointed representatives from the school districts...."

Thanks for your consideration.

Signed,

Kathleen Merritt

**ECAP** Chair



AGENDA ITEM - 4.c.

#### TITLE:

Approval of the appointment of Denise Scanlon to the Telluride Regional Airport Authority as the County at Large alternate member.

#### Presented by: Time needed:

#### **PREPARED BY:**

#### **RECOMMENDED ACTION/MOTION:**

Consideration to approve as presented.

#### **INTRODUCTION/BACKGROUND:**

See attached application.

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

# **ATTACHMENTS:** Description

Member Application

Upload Date 6/17/2019



#### **BOARD & COMMISSION MEMBER APPLICATION**

DATE: 5/21/19

NAME OF BOARD YOU ARE INTERESTED IN: Telluride Regional Airport Authority

REAPPOINTMENT \_\_\_\_\_ OR NEW APPOINTMENT \_\_\_\_ X \_\_\_\_

APPLICANT NAME: Denise Scanlon

ADDRESS OF RESIDENCE: 161 Red Rock Trail, Placerville, CO 81430 (For some boards this location may be relevant)

MAILING ADDRESS: PO Box 3725, Telluride, CO 81435

E-MAIL ADDRESS: denise@oneillstetina.com

PROFESSIONAL BACKGROUND – PERSONAL INTERESTS:

Assistant Vice President - Telluride Mountain Title Company 1996-2003

Office Manager/Bookkeeper – Telluride Landscape Company 2003-present

Customer Service Agent – Great Lakes Airlines Telluride 2009-2014 (Station Closed)

Certified Weather Observer 2010-2014

Go Team Member – Great Lakes Airlines 2010-2014

Customer Service Agent - Skywest Airlines Montrose 2014-2015 (Furloughed)

Customer Service Agent – Great Lakes Airlines Cortez 9/2015-3/2016 (Station Closed)

Real Estate Broker – Telluride Properties 2016-present

Customer Service Agent – Great Lakes Airlines Telluride 2016-2018 (Station Closed)

Customer Service Agent – Boutique Airlines Telluride 9/2018-present

#### REASON FOR INTEREST IN THIS BOARD - DESCRIBE WHY YOU WOULD LIKE TO BE APPOINTED:

I would love to be appointed to the Telluride Regional Airport Authority Board for many reasons. As you can see from my Professional Background information, I have lived in the Telluride area for 23 years and have worked in the local airline industry for 10+ years. I have personally watched and Telluride Airports' transformation and appreciate the value it brings to our region. I am interested in being a part of the continued improvement and growth of this community asset. Thank you for your consideration.



AGENDA ITEM - 4.d.

TITLE:

Approval of Chair's signature on an Annual Audit Extension Request not to exceed 60 days.

Presented by: Time needed:

#### **PREPARED BY:**

#### **RECOMMENDED ACTION/MOTION:**

To approve as presented.

#### **INTRODUCTION/BACKGROUND:**

6.7.2019 Per Ramona Request. Ramona will be at the meeting if there are any questions.

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

#### ATTACHMENTS: Description Audit Extension

Upload Date 6/19/2019



Dianne E. Ray, CPA State Auditor

### **Request for Extension of Time to File Audit**

This request must be submitted no later than six months follow a school districts fiscal year end, 8 months following housing authority's fiscal year end and seven months following all other local government's fiscal year end. All requests submitted after the due date will not be considered.

Requests may be submitted to fax number **303-869-3061** or email **osa.lg@state.co.us**.

Government Name:	SAN MIGUEL COUNTY
Name of Contact:	RAMONA RUMMEL
Address:	PO BOX 486
City/Zip Code	NORWOOD, 81423
Phone Number:	970-327-4885
Fax Number:	970-327-4090
E-mail	ramonar@sanmiguelcountyco.gov
Fiscal Year Ending (mm/dd/yyyy):	12-31-2018
Amount of Time Requested (in days): Not to exceed 60 days	60
Comments (optional):	

I understand that if the audit is not submitted within the approved extension of time the government named in the extension request will be considered in noncompliance without further notice, and the State Auditor shall take further action as prescribed by Section 29-1-606(5)(b), C.R.S.

## Must be signed by a member of the governing board.

Signature	
Printed Name:	
Title:	
Date:	



Office of the State Auditor



#### AGENDA ITEM - 4.e.

#### TITLE:

Acceptance for the Building Department Reports - April - May 2019

Presented by: Time needed:

#### **PREPARED BY:**

Edie Montague

#### **RECOMMENDED ACTION/MOTION:**

To approve as presented.

#### **INTRODUCTION/BACKGROUND:**

See attached.

#### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Building Dept
Description:			

#### ATTACHMENTS:

Description	Upload Date
Bldg Dept Aprl 2019 Report	6/19/2019
Bldg Dept May 2019 Report	6/19/2019

# BUILDING DEPARTMENT VALUATION AND FEES MONTHLY REPORT



**APRIL 2019** 

	Residential	Sommercial	Mechanical	2019 Year to Date	2018 Prior Year
Number of Permits	4	1	1	-19	18
Valuation	\$476,413.00	\$37,870.00	\$4,736.00	\$3,162,797.00	\$3,251,873.00
	8				
Permit Fees	\$4,160.37	\$585.23	\$0.00	\$24,299.21	\$24,090.00
Plan Review Fees	\$2,918.73	\$380.40	\$0.00	\$17,188.43	\$12,089.80
Use Tax	\$1,944.61	\$151.48		\$12,671.19	\$12,656.44
Impact Fees	\$3,622.64			\$4,889.88	\$3,894.04
Mechanical Fees			\$48.95	\$131.75	\$382.05
TOTAL FEES	\$12,646.35	\$1,117.11	\$48.95	\$59,180.46	\$53,112.33

Certificate of Occupancy/Completion	2	1	 5	16
Inspections	43		114	176

# Issuance Report by Permit Type

#### Permits Issued From Monday, April 1, 2019 through Tuesday, April 30, 2019

Permit Number	Location Address	Sq Ft	Valuation	lssued	Site Location	Owner		
Commercial Bu	uilding							
COMM-4-19-2766	118 SOCIETY Dr	2038	37,870	4/11/19	1st floor South side	Big Dog Holdings LLC A CO LLC		
		2038	37,870.00		Number of Pen	nits for Commercial Building:1		
Mechanical Pe	rmit							
MECH-4-19-2765	763 VANCE Dr	0	4,736	4/03/19		Telecam Partnership II Ltd		
		0	4,736.00		Number of P	ermits for Mechanical Permit:1		
<b>Residential Ac</b>	cessory				o e con contra comenza conservador de la contra con Con el Contra conservador de la contra co			
ACC-4-19-2771	767 HIGHWAY 145 Spur	511	117,513	4/26/19	Brown Homestead	Theonia Boyd		
ACC-7-18-2645	768 SADDLE HORN Ln	576	120,900	4/25/19	Ski Ranches	John W Massey		
		576	238,413.00		Number of Permits for Residential Accessory: 2			
Residential Bu	ilding							
RES-3-19-2763	2093 COUNTY ROAD 45M	1324	132,400	4/18/19	Wright's Mesa	Leon Spiller Leon E and Patricia Spiller Living Trust		
RES-4-19-2764	1275 San Miguel St	1100	105,600	4/08/19	Norwood	Jose Miguel Hernandez Almanza		
		1324	238,000.00		Number of Per	mits for Residential Building: 2		
						· · · · · · · · · · · · · · · · · · ·		
Grand Total	Sg Footage 5.5	549						
Grand Total	Valuation 519.01	9-00			-			

# Permit Payments - Building Only (By GL Code)

#### From 4/1/2019 To 4/30/2019

0010.380	10		
Commerc	ial Building		
Building Pe	rmit Fee		
04/11/2019	COMM-4-19-2766	Building Permit Fee	\$585.23
			\$585.23
Residentia	al Accessory		
<b>Building Pe</b>	rmit Fee		
04/25/2019	ACC-7-18-2645	Building Permit Fee	\$1,244.67
04/26/2019	ACC-4-19-2771	Building Permit Fee	\$1,225.86
			\$2,470.53
Residentia	al Building		
Building Per	rmit Fee		
04/18/2019	RES-3-19-2763	Building Permit Fee	\$989.93
04/19/2019	RES-11-17-2545	Building Permit Fee	\$124.60
04/08/2019	RES-4-19-2764	Building Permit Fee	\$575.31
			\$1,689.84
		TOTAL FEES	\$4,745.60
0010.710	0	TOTAL FEES	\$4,745.60
0010.710 Commerc	0 ial Building	TOTAL FEES	\$4,745.60
0010.710 Commerc Plan Review	0 ial Building	TOTAL FEES	\$4,745.60
0010.710 Commerc Plan Review 04/11/2019	0 ial Building v Fee COMM-4-19-2766	Plan Review Fee	<b>\$4,745.60</b> <b>\$</b> 380.40
0010.710 Commerc Plan Review 04/11/2019	0 ial Building v Fee COMM-4-19-2766	Plan Review Fee	\$4,745.60 \$380.40
0010.710 Commerc Plan Review 04/11/2019 Residentia	ial Building v Fee COMM-4-19-2766 al Accessory	TOTAL FEES	\$4,745.60 \$380.40 \$380.40
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review	ial Building v Fee COMM-4-19-2766 al Accessory v Fee	Plan Review Fee	\$4,745.60 \$380.40 \$380.40
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771	Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645	Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81 \$809.04
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645	Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81 \$809.04 \$1,605.85
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645 al Building	Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$796.81 \$809.04 \$1,605.85
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019 Residentia Plan Review	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645 al Building v Fee	Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81 \$809.04 \$1,605.85
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019 Residentia Plan Review 04/08/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645 al Building v Fee RES-4-19-2764	Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81 \$809.04 \$1,605.85 \$373.95
0010.710 Commerc Plan Review 04/11/2019 Residentia Plan Review 04/26/2019 04/25/2019 Residentia Plan Review 04/08/2019 04/18/2019	ial Building v Fee COMM-4-19-2766 al Accessory v Fee ACC-4-19-2771 ACC-7-18-2645 al Building v Fee RES-4-19-2764 RES-3-19-2763	Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee Plan Review Fee	\$4,745.60 \$380.40 \$380.40 \$380.40 \$796.81 \$809.04 \$1,605.85 \$373.95 \$857.94

Wednesday, June 12, 2019

				\$1,312.88
			TOTAL FEES	\$3,299.13
0010.800	0			
Commerc	ial Building			
Use Tax				
04/11/2019	COMM-4-19-2766		Use Tax	\$151.48
Maabania	al Dormit			\$151.48
	arrennn			
				¢10 OF
04/04/2019	MECH-4-19-2703		Use lax	\$18.95
Poeidonti			· · ·	\$18.95
Heo Tay	al Accessoly			
04/26/2019	ACC-4-19-2771		Lise Tay	\$470.06
04/25/2019	ACC-7-18-2645		Use Tax	\$483.60
				\$953.66
Residenti	al Building			·
Use Tax	Ū			
04/19/2019	RES-11-17-2545		Úse Tax	\$20.00
04/08/2019	RES-4-19-2764		Use Tax	\$422.40
04/18/2019	RES-3-19-2763		Use Tax	\$529.60
			•	\$972.00
			TOTAL FEES	\$2,096.09
0010.810	0	an an an an Arthread an Art Arthread an Arthread an Arth		in an ann an tha ann a' bha ann an 1990. Ann an Chan Call an Changailte an tha ann an 1997.
Mechanic	al Permit			
Appliance V	ent Relocation/Insta	allation Replacement		
04/04/2019	MECH-4-19-2765		Appliance Vent Relocation/Installation I	\$7.25
Forced-air o	or gravity type furna	ce > 100,000 BTU		
04/04/2019	MECH-4-19-2765		Forced-air or gravity type furnace > 10	\$18.20
Mechanical	Permit Fee			
04/04/2019	MECH-4-19-2765		Mechanical Permit Fee	\$23.50
				\$48.95
			TOTAL FEES	\$48.95

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0830.4200		
Residential Accessory		
Impact Fee		,
04/26/2019 ACC-4-19-2771	Impact Fee	\$916.76
04/25/2019 ACC-7-18-2645	Impact Fee	\$1,607.21
		\$2,523.97
Residential Building		
Impact Fee		
04/19/2019 RES-11-17-2545	Impact Fee	\$1,098.67
		\$1,098.67

TOTAL FEES

\$3,622.64

\$13,812.41

# **Total Payments:**

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#### FUNDS COLLECTED BY THE BUILDING DEPARTMENT TENDERED TO TREASURER -(Payment Date or Date Range of) 4/1/2019 To 4/30/2019

Date	Received From (Applicant)	TREAS# (GL Account)	Finance (GL Debit)	Pay Type	Amount
Type of Permit:	Commercial Building				
Permit Number	r: COMM-4-19-2766				
4/11/2019	Big Dog Holdings LLC A CO LLC	0010.8000	101.0350.10.31120	Check # 103	\$151.48
4/11/2019		0010.7100	101.0350.10.33105	Check # 103	\$380.40
4/11/2019		0010.3800	101.0350.10.32105	Check # 103	\$585.23
				Total Check Amou	unt: <b>\$1,117.11</b>
			Commercial Building	Permits: 1 Total:	\$1,117.11
Type of Permit:	Mechanical Permit				
Permit Number	:: MECH-4-19-2765				
4/4/2019	Telecam Partnership II Ltd	0010.8000	101.0350.10.31120	Check # 7943	\$18.95
4/4/2019		0010.8100	101.0350.10.32105	Check # 7943	\$18.20
4/4/2019		0010.8100	101.0350.10.32105	Check # 7943	\$7.25
4/4/2019		0010.8100	101.0350.10.32105	Check # 7943	\$23.50
•				Total Check An	nount: \$67.90
			Mechanical Per	mit Permits: 1 Tot	al: \$67.90
Type of Permit:	Residential Accessory				
Permit Number	r: ACC-4-19-2771	0040 0000	404 0350 40 33405	Chask # 7402	
4/26/2019	J Wesley Boya	0010.3800	101.0350.10.32105	Check # 7493	φ1,220.00 #470.00
4/26/2019		0010.8000	101.0350.10.31120	Check # 7493	\$470.06
4/26/2019		0010.7100	101.0350.10.33105	Check # 7493	\$796.81
4/26/2019		0830.4200	224.0120.10.33170	Check # 7493	\$916.76
				Total Check Amou	nt: \$3,409.49
Al25/2019	r: AUC-7-18-2645 John W/ Massey	0830 4200	224 0120 10 33170	Check # 8699	\$1 607 21
4/25/2019	Joint VV Wassey	0010 7100	101 0350 10 33105	Check # 8600	¢809.04
4/25/2019		0010.3800	101.0350.10.32105	Check # 8699	\$1 244 67
4/25/2019	,	0010.8000	101.0350.10.32100	Check # 8699	\$483.60
4/20/2019		0010.0000	101.0000.10.01120		
			Destination Assessments	Total Check Amou	nt: \$4,144.52
	1997 - Marine		Residential Accessory	Permits: 2 Iotal:	φ7,004.01
Type of Permit:	Residential Building				
4/8/2019	Jose Miguel Hernandez Almanza	0010.8000	101.0350.10.31120	Cash	\$422.40
4/8/2019		0010.7100	101.0350.10.33105	Cash	\$373.95
4/8/2019		0010.3800	101.0350.10.32105	Cash	\$575.31
				Total Check Amou	nt: \$1,371.66
Permit Number	r: RES-11-17-2545			,	
4/19/2019	Lisa Henson Revocable Trust	0010.8000	101.0350.10.31120	Check # 2927	\$20.00
4/19/2019		0830.4200	224.0120.10.33170	Check # 2927	\$1,098.67
4/19/2019		0010.3800	101.0350.10.32105	Check # 2927	\$124.60
4/19/2019		0010.7100	101.0350.10.33105	Check # 2927	\$80.99
				Total Check Amou	int: <b>\$1,324.26</b>
A/18/2010	C RES-3-19-2763 eon and Patricia R Spiller Living Trus	0010 8000	101 0350 10 31120	Check # 1264	\$529 60
A/18/2010		0010.3800	101.0350.10.01120	Check # 1964	\$020.00 \$080 03
4/18/2019		0010.7100	101.0350.10.33105	Check # 1264	\$857.94

Total Check Amount: \$2,377.47

Residential Building Permits: 3 Total: \$5,073.39

#### Grand Total Permits Issued: Grand Total Permit Fees: \$13,812.41

# San Miguel County Monthly Permit Log - Permit Issued from 4/1/2019 to 4/30/2019

ISSUANCE	OWNER	PERMIT ID	OWNER MAILING ADDR.	VALUATION	CLASS OF WORK	JOB ADDRESS	CONTRACTOR INFO	
4/03/2019	Telecam Partnership II Ltd	MECH-4-19-2765	PO Box 3231 Telluride, CO 81435	4,736	New	763 VANCE Dr Telluride, CO 81435	Controlled Hydronics 301 Rio Vistas Dr Unit D	(970)728-4801 Telluride, CO 81435
4/11/2019	Big Dog Holdings LLC A CO LLC	COMM-4-19-2766	425 Park Avenue S 21B New York, NY 10016	37,870	Tenant Finish	118 SOCIETY Dr 100 Telluride, CO 81435		
4/08/2019	Jose Miguel Hemandez Almanza	RES-4-19-2764	PO Box 731 Norwood, CO 81423	105,600	Modular	1275 San Miguel St Norwood, CO 81423		······································
4/18/2019	Leon and Patricia R Spiller Living Trust DTD 9 9 1994	RES-3-19-2763	66 CR 2755 Aztec, NM 87410	132,400	Single Family Residence	2093 COUNTY ROAD 45M Norwood, CO 81435		
4/26/2019	Theonia Boyd	ACC-4-19-2771	65 Wachusett Rd Needham, MD 02492-3922	117,513	Accessory Building	767 W HIGHWAY 145 Spur Telluride, CO 81435	Dan Houlihan PO Box 259	Telluírde, CO 81435
4/25/2019	John W Massey	ACC-7-18-2645	1045 Del Haven Dr Delray Beach, FL 33483	120,900	Accessory Building	768 SADDLE HORN Ln Telluride, CO 8435-	Daley Construction 209 E Serapio Dr	(970)729-1158 (Cell) Telluride, CO 81435

Grand Total Valuation

519,019

### Certificate of Occupancy & Certificate of Completion Issuance Report

By Permit Type

### C.O.'s Issued From Monday, April 1, 2019 through Tuesday, April 30, 2019

Commercial Building         Certificate of Completion         CoC-1955       4/25/2019         118 SOCIETY       Approved         COMM-1-19-2743         Totals for Commercial Buildin         Mechanical Permit         Certificate of Completion         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1954         Co-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	₽g: 1
Certificate of Completion         CoC-1955       4/25/2019       118 SOCIETY       Approved       COMM-1-19-2743         Totals for Commercial Buildin         Mechanical Permit         Certificate of Completion         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         Coc-1953       4/18/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530         Coc-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	זg: 1
CoC-1955       4/25/2019       118 SOCIETY       Approved       COMM-1-19-2743         Totals for Commercial Buildin         Mechanical Permit       Totals for Commercial Buildin         Certificate of Completion       Approved       MECH-4-19-2765         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         CoC-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	ıg: 1
Totals for Commercial Buildin         Mechanical Permit         Certificate of Completion         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Permit         Residential Building         Certificate Of Occupancy         Co-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	ıg: 1
Mechanical Permit         Certificate of Completion         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Perm         Residential Building         Certificate Of Occupancy         Co-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	
International Control         Certificate of Completion         CoC-1953       4/18/2019       763 VANCE Dr       Approved       MECH-4-19-2765         Totals for Mechanical Pern         Residential Building         Certificate Of Occupancy         Co-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	the second se
CoC-1953     4/18/2019     763 VANCE Dr     Approved     MECH-4-19-2765       Totals for Mechanical Pern       Totals for Mechanical Pern       Certificate Of Occupancy       Co-1954     4/23/2019     101 PRUDENCIO Ln     Approved     RES-10-17-2530	
CoC-1953 4/18/2019 763 VANCE Dr Approved MECH-4-19-2765 Totals for Mechanical Perm Residential Building Certificate Of Occupancy CO-1954 4/23/2019 101 PRUDENCIO Ln Approved RES-10-17-2530	v
Totals for Mechanical Pern         Residential Building         Certificate Of Occupancy         CO-1954       4/23/2019       101 PRUDENCIO Ln       Approved       RES-10-17-2530	
Residential Building         Certificate Of Occupancy         CO-1954       4/23/2019         101 PRUDENCIO Ln       Approved	nit: 1
CO-1954 4/23/2019 101 PRUDENCIO Ln Approved RES-10-17-2530	
CO-1954 4/23/2019 101 PRUDENCIO Ln Approved RES-10-17-2530	
Totals for Residential Buildin	ישביים וg: 1
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# BUILDING DEPARTMENT VALUATION AND FEES MONTHLY REPORT



**MAY 2019** 

				2019	2018
	Residential	Commercial	Mechanical	Year to Date	Prior Year
Number of Permits	5	2		26	26
Valuation	\$629,243.00	\$20,400.00		\$3,812,440.00	\$5,113,047.00
Permit Fees	\$5,408.87	\$421.68		\$30,129.76	\$36,653.22
Plan Review Fees	\$3,322.66	\$274.09		\$20,785.18	\$20,255.88
Use Tax	\$2,413.08	\$60.00		\$15,144.27	\$20,101.13
Impact Fees	\$5,923.98			\$10,813.86	\$10,552.03
Mechanical Fees				\$131.75	\$617.00
TOTAL FEES	\$17,068.59	\$755.77	\$0.00	\$77,004.82	\$88,179.26

Certificate of Occupancy/Completion	16	2	18	24
Inspections			0	263

# Permit Payments - Building Only (By GL Code)

#### From 5/1/2019 To 5/31/2019

0010.380	0		
Commerc	ial Building	· ·	
Building Per	rmit Fee		
05/10/2019	COMM-5-19-2777	Building Permit Fee	\$140.28
05/22/2019	COMM-5-19-2779	Building Permit Fee	\$281.40
			\$421.68
Residentia	al Building		
Building Per	rmit Fee		
05/17/2019	RES-5-19-2775	Building Permit Fee	\$2,580.18
05/02/2019	RES-4-19-2768	Building Permit Fee	\$1,583.25
05/24/2019	RES-5-19-2781	Building Permit Fee	\$948.36
			\$5,111.79
		TOTAL FEES	\$5,533.47
0010.710	0		
Commerci	ial Building		
Plan Review	/ Fee		• •
05/10/2019	COMM-5-19-2777	Plan Review Fee	\$91.18
05/22/2019	COMM-5-19-2779	Plan Review Fee	\$182.91
			\$274.09
Residentia	al Building	·	
Plan Review	/ Fee		
05/24/2019	RES-5-19-2781	Plan Review Fee	\$616.43
05/02/2019	RES-4-19-2768	Plan Review Fee	\$1,029.11
05/17/2019	RES-5-19-2775	Plan Review Fee	\$1,677.12
			\$3,322.66
		TOTAL FEES	\$3,596.75
0010.800	0		
Commerci	ial Building		
Use Tax	-		
05/22/2019	COMM-5-19-2779	Use Tax	\$60.00

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Wednesday, June 12, 2019

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				\$60.00
Reroofing				
Use Tax				
05/17/2019	ROOF-4-19-2767		Use Tax	\$64.00
				\$64.00
Residenti	al Building			
Use Tax				
05/02/2019	RES-4-19-2768		Use Tax	\$700.00
05/17/2019	RES-5-19-2775		Use Tax	\$1,333.08
05/24/2019	RES-5-19-2781		Use Tax	\$316.00
				\$2,349.08
		· · · · · · · · · · · · · · · · · · ·	TOTAL FEES	\$2,473.08
0830.420	0			
Residenti	al Building	<u>.</u>		,
Impact Fee				
05/21/2019	RES-5-16-2241		Impact Fee	\$4,204.56
05/02/2019	RES-4-19-2768		Impact Fee	\$635.10
05/17/2019	RES-5-19-2775		Impact Fee	\$1,084.32
				\$5,923.98
			TOTAL FEES	\$5,923.98
101.0350	.10.32105			
Reroofing				<u>,</u>
- Buildina Pe	rmit Fee			
05/17/2019	ROOF-4-19-2767		Building Permit Fee	\$297.08
				\$297.08
			TOTAL FEES	\$297.08
Total Payments:				\$17,824.36

# Issuance Report by Permit Type

#### Permits Issued From Wednesday, May 1, 2019 through Friday, May 31, 2019

Permit Number	Location Address	Sq Ft	Valuation	Issued	Site Location	Owner	
Alternative Ene	ərgy						
ALT-5-19-2778	321 RESERVE Dr	0	26,000	5/10/19	· ·	Eugenie Nielson	
		0	26,000.00		Number of	Permits for Alternative Ener	rgy:1
Commercial Bu	uilding	Ange State State State State Ange State	al nine a constant a super-				
COMM-5-19-2777	1115 LINCOLN Avenue	0	5,400	5/10/19	Norwood	Norwood Christian Church	
COMM-5-19-2779	1630 SUMMIT St	288	15,000	5/22/19	Norwood	Jesse Dudley	
		200	20,400.00				ing. 2
Reroofing					edi al la contra contra contra de la contra d Contra de la contra d		
ROOF-4-19-2767	215 SERAPIO Dr	0	16,000	5/17/19		Russell Montgomery	
		0	16,000.00		Nu	mber of Permits for Reroof	ing:1
Residential Bu	ilding			SMR DEVENSIONER			
RES-4-19-2768	143 STOCK Rd	367	175,000	5/02/19	Placerville	Steven J Reid Rev Trust UAD 12/15/194	
RES-5-19-2775	21 ROYER Ln	593	333,270	5/17/19	ldarado	Diane Linen Powell Trust	
RES-5-19-2781	106 BASQUE Rd	0	78,973	5/24/19	Aldasoro	Pinkert Family Trst DTD 7 28 2000	
		593	587,243.00		Number of Pe	ermits for Residential Build	ing:3

Grand Total Sq Footage 1,248

Grand Total Valuation 649,643.00

Wednesday, June 12, 2019

# San Miguel County Monthly Permit Log - Permit Issued from 5/1/2019 to 5/31/2019

ISSUANCE	OWNER	PERMIT ID	OWNER MAILING ADDR.	VALUATION	CLASS OF WORK	JOB ADDRESS	CONTRACTOR INFO	
5/02/2019	Steven J Reid Rev Trust UAD 12/15/194	RES-4-19-2768	PO Box 277 Placerville, CO 81430	175,000	Remodel	143 STOCK Rd Placerville, CO 81430		
5/10/2019	Eugenie Nielson	ALT-5-19-2778	PO Box 382 Norwood, CO 81423	26,000	Single Family Residence	321 N RESERVE Dr Norwood, CO 81423	Alternative Power Enterprises PO Box 351	(970)626-9842 Ridgway, CO 81432
5/10/2019	Norwood Christian Church	COMM-5-19-2777	PO Box 931 Norwood, CO 81423	5,400	Addition	1115 LINCOLN Avenue Norwood, CO		
5/17/2019	Diane Linen Powell Trust	RES-5-19-2775	3939 Fortham Rd NW Washington, DC 20016-1937	333,270	Addition	21 ROYER Ln Telluride, CO 81435	Allison Construction	(970)626-5743 CO
5/17/2019	Russell Montgomery	ROOF-4-19-2767	215 E Serapio Dr Telluride, CO 81435	16,000	] Reroofing	215 E SERAPIO Dr Telluride, CO 81435		
5/22/2019	Jesse Dudley	COMM-5-19-2779	PO Box 232 Norwood, CO 81423	15,000	New	1630 SUMMIT St Norwood, CO 81423		
5/24/2019	Pinkert Family Trst DTD 7 28 2000	RES-5-19-2781	106 Basque Rd Telluride, CO 81435	78,973	Remodel	106 BASQUE Rd Telluride, CO 81435	deLuca Construction PO Box 3801	(970)729-0251 (Cell) Telluride, CO 81435

Grand Total Valuation

649,643

# **Certificate of Occupancy & Certificate of Completion** Issuance Report By Permit Type

#### C.O.'s Issued From Wednesday, May 1, 2019 through Friday, May 31, 2019

C.O. Number	Issued	Location Address	Permit Status	Permit Number
Commercial	Building			
Certificate of	Completion			
CoC-1958	5/7/2019	85 SKALLA Rd	Approved	COMM-11-18-2721
Certificate Of	Occupancy			
CO-1956	5/2/2019	1455 Pinon St	Approved	COMM-6-18-2633
			Totals fo	r Commercial Building: 2
Reroofing				
Certificate of	Completion			
CoC-1962	5/31/2019	104 PRUDENCIO Ln	Completed	ROOF-1-19-2749
				Totals for Reroofing: 1
<b>Residential</b> A	ccessory			
Certificate of	Completion			
CoC-1973	5/31/2019	1543 COUNTY ROAD 60U Blvd	Completed	ACC-10-18-2713
Certificate of	Completion			
CoC-1975	5/31/2019	1541 COUNTY ROAD 60U Rd	Completed	ACC-11-18-2728
Certificate of	Completion			
CoC-1957	5/7/2019	258 WOODSTOCK Rd	Completed	ACC-3-19-2758
			Totals for	Residential Accessory: 3
Residential E	Building			
Certificate Of	Occupancy			
CO-1960	5/15/2019	21933 Hwy 145	Completed	2007081
Certificate Of	Occupancy			
CO-1974	5/31/2019	1541 COUNTY ROAD 60U Rd	Completed	RES-10-18-2716
Certificate Of	f Occupancy			
CO-1959	5/14/2019	66 WILDWOOD Ln	Completed	RES-4-15-2036
Certificate Of	f Occupancy			· · ·
CO-1961	5/9/2019	6046 COUNTY ROAD 60M St	Completed	RES-5-19-2780

C.O. Number	Issued	Location Address	Permit Status	Permit Number				
Certificate Of Occupancy								
CO-1967	5/31/2019	1541 COUNTY ROAD 60U	Completed	RES-7-18-2652				
Certificate Of	Occupancy							
CO-1968	5/31/2019	1541 COUNTY ROAD 60U Rd	Completed	RES-7-18-2653				
Certificate Of	Occupancy							
CO-1969	5/31/2019	1541 COUNTY ROAD 60U	Completed	RES-7-18-2654				
Certificate Of	Occupancy							
00 (07)								
CO-1971	5/31/2019	1541 COUNTY ROAD 600	Completed	RES-7-18-2655				
Certificate Of	Occupancy							
00 1066	E /24 /2040		Completed	DE0 7 40 0050				
00-1900	5/31/2019	1541 COUNTERCAD 600	Completed	RE3-7-18-2000				
Certificate Of Occupancy								
CO-1970	5/31/2019		Completed	DES 7 18 2657				
	0.01/2019	1341 000111 NOAD 000	Completed	NEG-7-10-2007				
Certificate Of Occupancy								
CO-1972	5/31/2019	1543 COUNTY ROAD 6011	Completed	RES-8-18-2674				
55 (V) <b>E</b>	010112010							

Totals for Residential Building: 11
#### FUNDS COLLECTED BY THE BUILDING DEPARTMENT **TENDERED TO TREASURER -**(Payment Date or Date Range of) 5/1/2019 To 5/31/2019

Date	Received From (Applicant)	TREAS# (GL Account)	Finance (GL Debit)	Pay Type	Amount
Type of Permit:	Commercial Building				
Permit Number	: COMM-5-19-2777	· · · · · · · · · · · · · · · · · · ·			
5/10/2019	Norwood Christian Church	0010.3800	101.0350.10.32105	Check # 7961	\$140.28
5/10/2019		0010.7100	101.0350.10.33105	Check # 7961	\$91.18
				Total Check Am	ount: <b>\$231.46</b>
Permit Number	: COMM-5-19-2779				<b>****</b>
5/22/2019	Jesse Dudley	0010.8000	101.0350.10.31120	Check # 1438	\$60.00
5/22/2019		0010.7100	101.0350.10.33105	Check # 1438	\$182.91
5/22/2019		0010.3800	101.0350.10.32105	Check # 1438	\$281.40
				Total Check Am	ount: <b>\$524.31</b>
			Commercial Buildir	ng Permits: 2 Tota	ıl: \$755.77
Type of Permit:	Reroofing				
Permit Number	: ROOF-4-19-2767				
5/17/2019	Russell Montgomery	101.0350.10.32105	101.0350.10.32105	Check # 3724	\$297.08
5/17/2019	х. Х.	0010.8000	101.0350.10.31120	Check # 3724	\$64.00
				Total Check Am	ount: <b>\$361.08</b>
			Reroofir	ng Permits: 1 Tota	ıl: \$361.08
Type of Permit:	Residential Building				
Permit Number	:: RES-4-19-2768		- - -		
5/2/2019 8	Steven J Reid Rev Trust UAD 12/15/1	0010.7100	101.0350.10.33105	Check # 1061	\$1,029.11
5/2/2019		0830,4200	224.0120.10.33170	Check # 1061	\$635.10
5/2/2019		0010.3800	101.0350.10.32105	Check # 1061	\$1,583.25
5/2/2019		0010.8000	101.0350.10.31120	Check # 1061	\$700.00
				Total Check Amou	ınt: <b>\$3,947.4</b> 6
Permit Number	: RES-5-19-2775				
5/17/2019	Edward Angus Powell Jr Trust	0830.4200	224.0120.10.33170	Check # 3037	\$1,084.32
5/17/2019		0010.8000	101.0350.10.31120	Check # 3037	\$1,333.08
5/17/2019		0010.7100	101.0350.10.33105	Check # 3037	\$1,677.12
5/17/2019		0010.3800	101.0350.10.32105	Check # 3037	\$2,580.18
				Total Check Amou	int: \$6,674.70
Permit Number	:: RES-5-16-2241		004 0400 40 00470		<b>#4 004 50</b>
5/21/2019	Burleigh Fernald	0830.4200	224.0120.10.33170	CRECK # 6157	\$4,204.56
				Total Check Amou	unt: <b>\$4,204.56</b>
Permit Number	": RES-5-19-2781 Pinkert Family Tret DTD 7 28 2000	0010 7100	101 0350 10 33105	Check # 1383	\$616.43
5/24/2019	Finisher anny 1130 DTD 7 20 2000	0010.0100	101 0350 10 31120	Check # 1383	\$316.00
5/24/2019		0010 3800	101.0350.10.32105	Check # 1383	\$948.36
012712010		00,0.0000	101.0000.10.02.000		
				Total Check Amol	int: \$1,880.79

Residential Building Permits: 4 Total: \$16,707.51

### **Grand Total Permits Issued:** \$17,824.36 Grand Total Permit Fees:

7



### AGENDA ITEM - 4.f.

# TITLE:

Approval of Chair's signature on a Memorandum of Understanding between the San Miguel Basin Fair Board and the San Miguel Basin CSU Extension office.

### Presented by: Time needed:

### **PREPARED BY:**

### **RECOMMENDED ACTION/MOTION:**

To approve as presented.

### **INTRODUCTION/BACKGROUND:**

see attached document

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

### **ATTACHMENTS:**

Description MOU Fair Board and CSU Ext Office Upload Date 6/19/2019

#### Memorandum of Understanding

#### Between the San Miguel Basin Fair Board and the San Miguel Basin CSU Extension Office

The following Memorandum of Understanding (basically a job description for both parties) will be used as a guide, clarifying responsibilities relating to the 4-H program, its members and exhibits at the San Miguel Basin Fair.

- 1. This Agreement is effective March 30, 2019, and shall be reviewed annually.
- 2. An annual post-fair meeting will be conducted and needed changes to the MOU will be noted. The Fair Board and Extension staff will work cooperatively to ensure a safe and positive youth development experience and conduct all necessary activities concerning the 4-H program at the San Miguel Basin Fair.
- 3. The Fair Board and Extension will communicate about 4-H issues that may arise.
- 4. Nothing in this memorandum shall preclude the Fair Board from having final jurisdiction in case of disputes regarding exhibiting at the fair.

#### The Fair Board:

- 1. Will consider suggestions from interested parties (CSU Extension Office, Roping Club, San Miguel County Fairgrounds staff, chamber of commerce, etc.) and set the dates of the fair and determine the schedule of events.
- 2. Will be responsible for providing equipment, facilities, and entertainment.
- 3. Will be responsible for determining rules and regulations for the county Fair (in Cooperation with CSU Extension rules for 4-H) and will have final jurisdiction in case of disputes regarding exhibiting at the fair, except for 4-H eligibility and 4H General Projects.
- 4. Will appoint all committees and superintendents who will serve as subcommittees/volunteers of the fair board.
- 5. The Fair Board is responsible for securing, hiring and paying judges, announcers and assistants for all shows. State 4-H guidelines will be used to judge all general projects in order to comply with State Fair rules.
- 6. Will pay for printing and distribution of the Fair Book, specified correspondence; show programs exhibit tags, stall cards entry forms, marketing brochures for livestock sale, livestock (including rabbit and poultry identification tags, fair posters, meal vouchers and miscellaneous copying, etc.)
- 7. Will be responsible for arranging and paying for advertising for fair events.
- 8. The Fair Board shall finalize all fair rules by May 15 prior to the fair and forward to CSUE within a week of finalizing
- 9. Will provide a livestock sale committee with the responsibility of planning and putting on the Junior Livestock Sale on the last Saturday of Fair.
- 10. Will inform (confirm) the CSU Extension Office of placings in all shows (livestock, horse, dog, small animal), carcass/ultrasound, rate of gain, poster contests, display contests, royalty, Open fair as soon as possible, and not later than the Monday after fair.
- 11. Will secure sponsors for any such awards that are determined by the Fair Board and/or community that are not CSUE Sponsored awards.
- 12. The Fair Board will purchase ribbons, banners, etc., for all fair shows.

Will not contact 4-H youth participants of the fair directly, but only through the CSUE Office to minimalize liability. Communications related to the Fair will be copied to the Fair Board, 4-H leaders and CSUE Office and vice versa in the interest of keeping everyone simultaneously informed.

SMB Fair Board President	A Wette Jen- SMB CSU Extension Director 5/29/20/9
Date	C/ ML Date
San Miguel County BOCC Chair	CSU Regional Director
Jadan Spot	/ Date /
4-H Program Coordinator 5 - 13 - 19	

Date



AGENDA ITEM - 5.a.

TITLE:

9:30 a.m. Recognition of Alan Hatfield for 20 years of service on the Road and Bridge Dept.

**Presented by:** Ryan Righetti, County Road and Bridge Superintendent **Time needed:** 5 mins

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

### **INTRODUCTION/BACKGROUND:**

Thank you for all your hard work.

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			



AGENDA ITEM - 5.b.

TITLE:

9:35 a.m. Update with Coyote Enterprises on septic and other related issues in the County.

**Presented by:** Rebecca and Steve Rogers, Coyote Enterprises LLC **Time needed:** 15 mins

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

### **INTRODUCTION/BACKGROUND:**

4.15.2019 Rebecca and Steve Rogers has requested time with both of them Coyote Enterprises regarding septic systems and other issues. First thing in the am will work best for them. Notify Planning and building to attend.

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

### ATTACHMENTS:

Description

Discussion points

Upload Date 6/21/2019

### Points of discussion for BOCC from septic folks

**Rebecca** Rogers

Fri 6/21/2019 11:38 AM

To: carmen@smc.co.gov <carmen@smc.co.gov>

Carmen,

Here are some things we would like to point out at the upcoming meeting on June 26th. 1) We would like a guarantee that we will always be able to dump in Telluride, regardless of how many people are in town and how many beds are full.

2) The town has said they will continually raise septic dumping fees by 8% annually. It is becoming unaffordable to most, especially senior citizens and young folks. Will there ever be a price cap?

3) We are charged by the size of our truck which means most carriers are paying for a lot of air with each dumping. No gallonage metering is done.

4) It costs approximately 250.00 for a pump, and 200.00 for a plastic tank, meaning a lot of people will begin to pump their own, and their neighbor's septic tanks, and dump the contents wherever they can, without being seen, especially in high water season, in the river. We've been told this from people already, and have also been asked to take it out onto their "north 40," to fill in prairie dog holes.

5) How much of a health issue will this affordability issue become, when folks can't afford to have it done, and live with septage coming up through their drains?

6) How many rural residents are there that depend on this waste treatment plant? How many new septic permits are given in a year on average? We pump septic tanks from the Utah border, all the way to Rico and every place in between, to the top of Dallas Divide, and all the surrounding mesas.

7) We've been told that each and every load of septage stresses their system terribly, as opposed to raw water and sewage. Are they running marginally now?

8) Most rural residents get their tanks pumped every 8-10 years. Why do they have to pay outrageous fees when the average household on the town sewer system puts thousand of gallons into the system daily?

9) We gave that treatment plant 18,000.00 last year, and that's just our company. Where is the profit in a business that is a necessity, when we can't raise our rates due to the town continually raising theirs? We wind up being the bad guys when I have to tell folks that it costs 600,00- 800.00 to get their tank pumped, and more every year.

10) We also feel that land application should be studied for this county. Montrose and Gunnison counties have it going on. I have the current EPA regulations on this subject, and there are ranchers in the area that would be willing to take it, as it is a viable growing source for animal feed. Treating septage at the treatment plant turns it into a completely dead sludge, when in reality, septage is very earth like.

Thank you for your time and consideration with these growing issues in our area. Respectfully,

Steve and Rebecca Rogers, owners

**Coyote Enterprises LLC** 

Full Service Septic and Portables

970-327-0222



AGENDA ITEM - 5.c.

TITLE:

9:50 a.m. Update with the Vegetation Control Manager.

**Presented by:** Ron Mabry, Vegetation Control Manager **Time needed:** 10 mins

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

# **INTRODUCTION/BACKGROUND:**

# FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			



AGENDA ITEM - 5.d.

# TITLE:

10:00 a.m. Update with the Colorado Department of Transportation.

**Presented by:** Michael McVaugh, Region Transportation Director **Time needed:** 90 mins

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

### **INTRODUCTION/BACKGROUND:**

### Commissioners' input and suggestions provided to CDOT 6/21/2019

- Update on the Promised signage at the Ophir Turn Area
- Mountain Club invited 6/21/2019 to discuss the proposed commuter Trail alignment in the CDOT ROW on Keystone Hill
- Thank you for 4 years of Bustang-Keep it up and expand.
- Question regarding the Norwood Speed limit in Town.
- Weed Control

### April 18, 2019

### Linda,

At this time I can set an approximate time 10:05 a.m. to meet with the Board on June 26, 2019. This meeting will be held in Norwood, most likely at the new library location (although this has not been set yet). I will email the Commissioners/Road and Bridget Dept. on thoughts of materials, they would like you to address. Thank you for contacting us, and we look forward to seeing you.

Carmen 7. Waiful

rom: Morschauser - CDOT, Linda [mailto:linda.morschauser@state.co.us]
Sent: Thursday, April 18, 2019 12:29 PM
To: Lynn Black <lynnb@sanmiguelcountyco.gov>
Subject: CDOT to Attend San Miguel BOCC Meeting- June 26th?

### Hi Lynn,

CDOT would like to propose the date of Wednesday, June 26th, to attend and present at your regularly scheduled BOCC meeting. We would need about 90 minutes to cover everything from our new Planning process, to our current and anticipated projects, as well as the Commissioners' input and suggestions. Different from previous years, we would like to be added to your agenda and come to you. Would this date work for you? And if so, would you be able to provide some possible presentation times that will fit? Thank you so much for your time.

### Linda Morschauser

Administrative Assistant II Region 5 - Environmental & Planning

P 970.385.1452 | F 970.385.1410 3803 N. Main Ave., Suite 300, Durango, CO 81301 linda.morschauser@state.co.us | www.codot.gov | www.cotrip.org

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

### **ATTACHMENTS:**

Description CDOT Region 5 Meeting Invite Upload Date 6/10/2019



Region 5 Region Director's Office 3803 N. Main Avenue, Suite 306 Durango, CO 81301

May 30, 2019

Attention: Lynn Black San Miguel County Commissioners PO Box 1170 Telluride, CO 81435

### **Re: CDOT Region 5 Invite to the 2019 County Meeting**

Dear County Commissioners,

The Colorado Department of Transportation (CDOT) would like to engage with you to identify critical transportation needs and projects that will guide funding decisions over the coming decade. CDOT traditionally reaches out to our planning partners by seeking input on transportation needs from County Commissioners at scheduled public meetings in their county. This effort includes all modes of transportation including our transit services such as Bustang and Bustang Outrider.

A meeting with CDOT is scheduled for:

Date: Wednesday, June 26th

Time: 10:00 AM

Location: Norwood Public Library 1110 Lucerne Street Norwood, CO 81423

This planning effort will kickoff in spring of this year and is expected to be completed by the spring/early summer of 2020. Over the next year, CDOT will be working with the Transportation Planning Regions to develop the Regional Transportation Plans which identify priority corridors and projects. These plans are developed with extensive input and feedback from the public and local agencies through meetings like this one. The end product will be a multimodal plan that:



- Guides funding decisions over the next ten-years;
- Addresses national goals, and state planning factors;
- Considers related studies;
- Considers vision, needs and desired state of the system;
- Includes multi-modal strategies to ensure the preservation and most efficient use of the existing system;
- Includes operational and asset management strategies to improve the performance of the existing system.

We have scheduled county meetings throughout Region 5 during the next few months to get your input. Please invite your Transportation Planning Region representatives, town/city and government officials and organizations, and transit providers and/or anchor institutions within your county that you feel would help ensure a robust conversation. CDOT will also be reaching out to those entities to ensure they get a chance to join us in conversation with you regarding projects and needs over the next ten years. In addition, these meetings will be an excellent opportunity for your Transportation Commissioner, Sidny Zink, to meet with the local officials in her district.

CDOT will be combining the input from county and TPR meetings with public input gathered from other forums such as online surveys, telephone town halls, pop-up events at county fairs, etc. We welcome this opportunity to exchange information about our transportation accomplishments and needs. Your participation in these meetings is critical to ensuring that CDOT is meeting the transportation needs of our state. Please visit <u>http://www.YourTransportationPlan.com</u> for more information about ways to engage.

Please do not hesitate to contact Linda Morschauser at: <u>linda.morschauser@state.co.us</u> or 970 385-1452, if you have any questions. We look forward to seeing you!

Sincerely,

Michael D. McVaugh Region Transportation Director

cc: Transportation Commissioner S. Zink T. Cady M. Muraro File





AGENDA ITEM - 6.a.

TITLE:

Discussion of the proposed 2020 Legislative Issues.

Presented by: Time needed: 15 mins

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

### **INTRODUCTION/BACKGROUND:**

6/19/2019 Request by board to have a discussion on the 2020 Leg. Issues.

# FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

# ATTACHMENTS: Description CCI 2020 Issue form

Upload Date 6/19/2019



# 2020 LEGISLATIVE ISSUE FORM

CCI is soliciting potential legislative issues for the 2020 legislative session. Please answer all of the questions below for each of your county's legislative issues. If your county submits multiple issue forms, please prioritize your issues. Submitted issues are discussed during the summer steering committees and district meetings. We encourage you to confer with your county managers or administrators and department heads, as well as other elected officials, to determine what issues are the most pressing in your county and have implications for other counties. All submitted issues forms <u>must have the support of the Board of County Commissioners or the</u> <u>Mayor/City and County Council</u>.

In accordance with the Legislative Principles that are part of CCI's Policy Statement, "...initiated legislation should be realistic and closely related to the conduct of our members' responsibilities if we are to retain a high level of credibility. Local elected officials' groups, county and otherwise, as well as other interest groups, should be encouraged to find sponsors for and initiate their own proposals, allowing our members and CCI to take a supportive role when the bill is introduced."

Please email your issue forms to Jeanne DeHaven at jdehaven@ccionline.org. Please feel free to use more than one page when submitting issues and to submit additional documentation or background information related to the issue. Legislative Issue Forms need to be returned by **Friday, June 28, 2019** in order to be discussed during the summer legislative review and steering committee meetings.

Name: _	
_	

County:	Phone:	E-mail:

1.) Issue:

# 2.) Background:

3.) Proposed Solution/Legislative Remedy (Please provide the specific statutory citation your board is requesting to modify AND the proposed language you are requesting.)

4.) County Commissioner role in this issue:

5.) Proponents/Opponents (Please indicate if your board has had conversations with proponents/opponents to date and their perspective on this proposal):

6.) Have you visited with your legislator(s) about this proposal? What was their reaction? Are members of your delegation likely to sponsor, support, or oppose this proposal:

7.) Anticipated Fiscal Impact:

8.) Please list the subject matter experts CCI staff can follow-up with for more information on this proposal:

9.) Priority Ranking (If multiple issues submitted):



AGENDA ITEM - 7.a.

# TITLE:

Approval of Chair's signature on Social Services Department Balance Sheet April 2019, Earned Revenue and Expenditures April 2019, Expenditures through Electronic Benefit Transfers May 2019, Check Register for the Month of May 2019, County Allocation/MOE Report APR-2019, and 2019 Caseload Report/MOTION

**Presented by:** Carol Friedrich, County Social Services Director **Time needed:** 15 mins

### **PREPARED BY:**

Carol Friedrich

### **RECOMMENDED ACTION/MOTION:**

Approval of Chair's signature on Social Services Department Balance Sheet April 2019, Earned Revenue and Expenditures April 2019, Expenditures through Electronic Benefit Transfers May 2019, Check Register for the Month of May 2019, County Allocation/MOE Report APR-2019, and 2019 Caseload Report

### **INTRODUCTION/BACKGROUND:**

Director's Update

Other, as needed

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
2019-063	5/15/2019		Social Services
Description:			

June Packet

# DEPARTMENT OF SOCIAL SERVICES

SAN MIGUEL COUNTY PO BOX 96 TELLURIDE, CO 81435 phone (970) 728-4411 fax (970) 728-4412

I, Carol Friedrich, Director of Social Services of San Miguel County, Colorado, hereby present the attached financial reports:

Balance Sheet, April 2019 Earned Revenue and Expenditures, April 2019 Expenditures through Electronic Benefit Transfers May 2019 Check Register, May 2019 County Allocation / MOE Report, APR-19

2019 Caseload Report

and certify that detailed, additional financial reports are available for inspection.

Cand Fruth

Carol Friedrich, June 26, 2019

I, \_\_\_\_\_, Chair of San Miguel County Board of Commissioners, hereby certify that the payments that are listed and set forth on the attached reports have been approved, and the payments issued from the Social Services fund.

Chair, June 26, 2019

### SAN MIGUEL COUNTY DEPT OF SOCIAL SERVICES BALANCE SHEET APRIL 2019

ASSETS: CASH<sup>.</sup>

101.1000	CASH - GENERAL	51,457.49	
101.2000	CASH - IV-E RESERVES	0.00	
101.3000	CASH - PARENTAL FEES	6,792.09	
101.4000	CASH - CSBG	0.00	
101.5000	CASH - PETTY	50.00	
101.4381	CASH - CBMS	0.00	
115.1000	A/R - TANF	15,916.57	
115.2000	A/R - AND	687.00	
115.3000	A/R - OAP	571.50	
115.4000	A/R - CC	0.00	
115.5000	A/R - LEAP	0.00	
115.6000	A/R - MEDICAID	0.00	
115.7000	A/R - FOOD ASSISTANCE	18,138.54	
115.8000	A/R - CHILD SUPPORT	125,549.19	
115.9000	A/R - ERRONEOUS DISBURSEMENTS	6,908.97	
	TOTAL CASH		226,071.35
DUE TO DUE FROM			
132.4200	DTDF - TANF	3,062.05	
132.2300	DTDF - CHILD CARE	(32.22)	
132.2500	DTDF - CORE	0.00	
132.1210	DTDF - CHILD WELFARE	25,419.42	
132.M100	DTDF - MEDICAID	4,555.65	
132,7000	DTDF - ADMIN	5,567.69	
132.4011	DTDF - NON ALLOCATED ADMIN	(61.81)	
132,1010	DTDF - ADULT PROTECTION	498.55	
132,8000	DTDF - CHILD SUPPORT	(676.25)	
132,6300	DTDT - FA JOB SEARCH	0.00	
132.5000	DTDF - LEAP	286.00	
132,4800	DTDF - AND	(79.80)	
132,4600	DTDF - HOME CARE ALLOWANCE	0.00	
132.4050	DTDF - OAP ADMIN	358.95	
132,9700	DTDF - TANE WORK PARTICIPATION	0.00	
132.8500	DTDF - TANE COLLECTIONS	35.80	
132.1296	DTDF - FA COLLECTIONS	0.00	
132,9800	DTDT - COST ALLOCATION	0.00	
132 9430	DTDF - STATE INCENTIVES	75.62	
132 9450	DTDF - FEDERAL INCENTIVES	26.60	
132 0000	DTDF - ADVANCES	0.00	
132 0310	DTDF - IV-F SANCTIONS	0.00	
132 1296	DTDE - CW DISCRETIONARY GRANT	0.00	
132 1590	DTDE - PARENTAL FEE	0.00	
132.1000		(73.22)	
152.5020		(13.22)	38 063 03
FIXED ASSETS		18 7/0 00	00,000.00
	TOTAL ASSETS	10,743.00	18 749 00
		•	283 783 38
			200,700.00

### LIABILITIES:

215.1000	A/R CONTRA - TANF	(15,916.57)
215.2000	A/R CONTRA - AND	(687.00)
215.3000	A/R CONTRA - OAP	(571.50)
215.4000	A/R CONTRA - CC	0.00
215.5000	A/R CONTRA - LEAP	0.00
215.6000	A/R CONTRA - MEDICAID	0.00
215.7000	A/R CONTRA - FOOD ASSISTANCE	(18,138.54)
215.8000	A/R CONTRA - CHILD SUPPORT	(125,549.19)
215.9000	A/R CONTRA - ERRONEOUS DISBURSEMENTS	0.00
220.4000	DEFERRED REVENUE - IV-E	0.00
220.5000	DEFERRED REVENUE - PARENTAL	(6,792.09)
220.6000	DEFERRED REVENUE - CSBG	0.00
220.4381	DEFERRED REVENUE - CBMS	0.00
220.7000	A/P - INDIRECT COST ALLOCATION	0.00
220.8200	DEFERRED REVENUE IV-D FED INC	0.00
221.1000	SUSPENSE - MISC	(4,046.14)
221.2000	SUSPENSE - MT	0.00
221.4000	SUSPENSE - TEFAP	0.00

### TOTAL LIABILITIES

# (171,701.03)

### RESERVE:

FUND BALANCE AS OF 12/31/18	(93,333.35) (18,749.00)
TOTAL RESERVE	(112,082.35)
TOTAL LIABILITIES AND RESERVE	(283,783.38)

### SAN MIGUEL COUNTY DSS EARNED REVENUE YTD 100% APRIL 2019

		YTD	% OF
	REVISED	REVENUES	REVENUES
	BUDGET	EARNED	COLLECTED
CURRENT PROPERTY TAX	127,600.00	94,493.92	74%
SPECIFIC OWNERSHIP	4,000.00	1,541.56	39%
DELINQUENT & INTEREST	700.00	161.14	-23%
COLORADO WORKS			
ADMIN	35,000.00	24,974.88	71%
GRANTS	35,000.00	4,997.53	14%
CHILD CARE			
	10,000.00	3,137.57	31%
CLIENT BENEFITS	48,000.00	31,493.17	66%
	207 000 00	440 750 07	E 40/
	207,000.00	110,752.87	54%
CHILD WELFARE 100%	35,000.00	121.10	0%
		0.00	
CW - DISCRETIONART GRANT		0.00	
COUNTY ADMINISTRATION	75,000.00	25,436.75	34%
HCPF - MEDICAID	54,000.00	20,584.02	38%
ADULT PROTECTION	12,000.00	2,352.20	20%
ADULT PROTECTION CLIENT	1,600.00	0.00	0%
CW CORE SERVICES 80/20	20,000.00	0.00	0%
CW CORE DAY TREATMENT 100%	24,800.00	6,666.68	27%
CHILD SUPPORT	7,700.00	2,980.50	39%
LEAP			
ADMIN/OUTREACH	450.00	286.00	64%
BASIC	50,000.00	16,324.93	33%
OAP			
HOME CARE ALLOWANCE		0.00	
ADMIN	5,500.00	2,036.69	37%
GRANTS	40,000.00	12,203.24	31%
AID TO NEEDY DISABLED	9,600.00	319.20	3%
MEDICAID TRANSPORTATION	20,000.00	4,553.82	23%
FS JOB SEARCH/EMPLOYMENT 1ST		0.00	
FOOD ASSISTANCE BENEFITS	500,000.00	93,561.54	19%
GRANTS/INCENTIVES	8,000.00	869.68	11%
RETAINED COLLECTIONS	500.00	313.11	63%
COUNTY BACKFILL	30,000.00	0.00	0%
TOTAL BUDGETED REVENUES	1,361,450.00	459,839.88	34%

### SAN MIGUEL COUNTY DSS EXPENDITURES YTD 100% APRIL 2019

			% OF
	REVISED BUDGET	EXPENDITURES YTD	% OF BUDGET EXPENDITURES SPENT
TANF			
ADMIN	40,000.00	28,120.14	70%
GRANTS	40,000.00	6,615.97	17%
	10 000 00	3 137 57	31%
	58 000 00	3, 137.37	59%
OLIENT DENEITIO	30,000.00	54,000.70	0070
CHILD WELFARE			
CHILD WELFARE 80/20%	250,000.00	140,220.26	56%
CHILD WELFARE 100%	35,000.00	121.16	0%
CW - DISCRETIONARY GRANT	0.00	0.00	
PSSF		0.00	
	97 500 00	31 795 99	33%
HCPF - MEDICAID	71 000 00	23 722 10	0070
	11,000.00	247 24	
ADULT PROTECTION	15.000.00	2.940.25	20%
ADULT PROTECTION CLIENT	2,000.00	0.00	0%
CW CORE SERVICES 80/20	25,000.00	776.05	3%
CW CORE DAY TREATMENT 100%	24,800.00	6,666.68	0%
CHILD SUPPORT	10,000.00	3,887.21	39%
ΙΕΔΡ			
	450.00	286.00	64%
LEAP BASIC BENEFITS	50.000.00	16.324.93	33%
		,	
OAP			
OAP HOME CARE ALLOWANCE		0.00	070/
	5,500.00	2,036.69	37%
OAP GRANTS	40,000.00	12,203.24	31%
AID TO NEEDY DISABLED	12,000.00	399.00	3%
FS JOB SEARCH/EMPLOYMENT 1ST		0.00	
GENERAL ASSISTANCE	10,000.00	3,970.59	40%
MEDICAID TRANSPORTATION	20,000.00	3,859.64	19%
FA REFUNDS		0.00	
FOOD ASSISTANCE BENEFITS	500,000.00	93,561.54	19%
DIRECT COST ALLOCATION	(8,500.00)	(2,396.70)	28%
COUNTY FUNDED GRANTS	53,500.00	42,094.04	79%
PROGRAM EXPENDITURES (NOT IDENTIFI	L	454 000 07	000/
I UTAL BUDGETED EXPENDITURES	1,361,250.00	454,983.37	33%

# SAN MIGUEL COUNTY DEPT OF SOCIAL SERVICES

# CHECK REGISTER

MAY 2019

Warrant			WARRANT
No.	Date	То	AMOUNT
DR	10-May	FIRST NET/ AT&T	43.73
DR	10-May	PAYROLL	14438.75
DR	10-May	СНР	7295.25
DR	10-May	LINCOLN FINANCIAL	132.57
DR	10-May	RETIREMENT	733.36
30740	16-May	QUILL CORP	96.43
30741	16-May	XEROX	162.35
30742	16-May	NEMT	26.84
30743	16-May	SAN MIGUEL DSS	26.84
30744	16-May	HR STORAGE	75.00
30745	16-May	BIG O TIRES	454.72
30746	16-May	SAN MIGUEL FINANCE OFFICE	300.00
30747	16-May	BAKED IN TELLURIDE	300.00
30748	16-May	TELLURIDE NEWSPAPERS	156.00
30749	16-May	SAN MIGUEL DSS	194.92
		ADJUSTMENT FOR NEMT	-194.92
		ADJUSTMENT FOR NEMT	-26.84
	20-May	CENTURY LINK	22.63
30750	28-May	VOID	\$0.00
30751	28-May	CENTURY LINK	\$1.13
30752	28-May	KINSHIP PLACEMENT	\$588.00
30753	28-May	JILL BETZ	\$219.24
30754	28-May	MONTROSE COUNTY CSEU	\$800.00
30755	28-May	BLACK HILLS ENERGY	\$8.85
	24-May	PAYROLL	\$14,382.78

### SAN MIGUEL COUNTY DSS EXPENDITURES THROUGH ELECTRONIC BENEFIT TRANSFER MAY 2019

	CASES	TOTAL COST	
TANF(Temporary Aid to Needy Families)	5	2,646.00	
OAP(Old Age Pension)	9	2,820.00	
AND(Aid to Needy Disabled)	1	217.00	
CHILD CARE	23	11,169.00	
CHILD WELFARE	5	7,537.87	
CORE SERVICES	0	0.00	
FOOD ASSISTANCE	133	23,732.00	
LEAP(Low-income Energy Assistance Program)	2	1,823.25	
TOTALS	178	49,945.12	

# **San Miguel County Allocation / MOE Report**

### Period: APR-19

CTY=113 (San Miguel)

	FY BUDGET	FY ACTUAL	FUNDS	<b>BUDGET VS</b>
	BALANCES	YTD	AVAILABLE	<b>ACTUALS FY</b>
		EXPENDITURES		VARIANCE
COLORADO WORKS BLOCK GRANT	102,173.64	82,660.12	19,513.52	80.90
NET COLORADO WORKS MOE	0.00	12,579.74	(12,579.74)	n/m
CHILD CARE ALLOCATION				
CHILD CARE DIRECT	85,191.48	70,695.31	14,496.17	82.98
CHILD CARE ADMINISTRATION	0.00	8,173.83	(8,173.83)	n/m
TOTAL CHILD CARE ALLOCATION	85,191.48	78,869.14	6,322.34	92.58
NET CHILD CARE COUNTY MOE	8,701.80	7,251.52	1,450.28	(83.33)
CHILD CARE TANF TRANSFER	0.00	0.00	0.00	n/m
CHILD WELFARE ALLOCATION:				
CHILD WELFARE 80/20 ALLOCATION ITEMS:				
CHILD WELFARE OUT-OF-HOME ALLOCATION	238,200.60	100,186.79	138,013.81	42.06
CHILD WELFARE ADMIN 80/20	0.00	206,465.18	(206,465.18)	n/m
CHILD WELFARE CASE SERVICES	0.00	4,865.88	(4,865.88)	n/m
CHILD WELFARE RELATED CHILD CARE	0.00	11,356.96	(11,356.96)	n/m
TOTAL CHILD WELFARE 80/20 ALLOCATION	238,200.60	322,874.81	(84,674.21)	135.55
CHILD WELFARE 100% ADMINISTRATION *	24,039.00	384.23	23,654.77	1.60
TOTAL CHILD WELFARE 80/20 AND 100% ALLOCATION	262,239.60	323,259.04	(61,019.44)	123.27
CHILD WELAFRE TRCCF ALLOCATION	0.00	0.00	0.00	n/m
CHILD WELFARE CHRP ALLOCATION *	5,199.84	0.00	5,199.84	0.00
CHILD WELFARE PRTF - FFS *	8,685.96	96.96	8,589.00	1.12
TOTAL CHILD WELFARE ALLOCATION	276,125.40	323,356.00	(47,230.60)	117.10

CDHS ADMINISTRATION ALLOCATION	75,659.64	74,563.32	1,096.32	98.55
TOTAL CDHS ADMINISTRATION ALLOCATION	75,659.64	74,563.32	1,096.32	98.55
HCPF REGULAR ADMINISTRATION ALLOCATION	17,156.16	28,058.49	(10,902.33)	163.55
HCPF ENHANCED ADMINISTRATION ALLOCATION	33,579.24	26,827.40	6,/51.84	/9.89
ADULT PROTECTION ADMINISTRATION ALLOCATION	15,171.24	7,770.51	7,400.73	51.22
ADULT PROTECTION CLIENT NEEDS ALLOCATION	2,000.04	500.00	1,500.04	25.00
CORE SERVICES ALLOCATION:				
CORE SERVICES MENTAL HEALTH 100%	0.00	1,800.00	(1,800.00)	n/m
CORE SERVICE ADAD 100%	0.00	0.00	0.00	n/m
CORE SERVICES SPECIAL ECONOMIC ASSIST 100%	642.84	118.03	524.81	18.36
CORE SERVICES OTHER 100%	27,309.60	16,666.70	10,642.90	61.03
CORE SERVICES 80/20	14,981.40	9,887.50	5,093.90	66.00
TOTAL CORE SERVICES ALLOCATION	42,933.84	28,472.23	14,461.61	66.32
EMPLOYMENT FIRST 80/20 PARTICIPANT REIMB	0.00	0.00	0.00	n/m
EMPLOYMENT FIRST 100%	0.00	304.88	(304.88)	n/m
FEDERAL FISCAL YEAR PROGRAMS (ENDING SEPT 30): **				
PROMOTING SAFE & STABLE FAMILES (IV-B SUB-PT 2)	0.00	0.00	0.00	n/m
LEAP ADMINISTRATION ALLOCATION	0.00	0.00	0.00	n/m
LEAP OUTREACH ALLOCATION	0.00	286.00	(286.00)	n/m
NON-FISCAL YEAR PROGRAMS: **				
* NOTE: Allocations for Child Welfare 100%, CHRP, PRTF -				
Care Policy & Financing in addition to those allocated fr				
** - NOTE: Expenditures Refer to State Fiscal Year-To-Dat				

### SAN MIGUEL COUNTY BOARD OF SOCIAL SERVICES CASELOAD REPORT 2019

	TANE	DIVER-	O.A.P +	AND,SSI	HCBS	MED	ΙΕΔΡ	CHILD	FS	GA	τοται
			HOA	TOOR	ПОВО			OARE	10	04	TOTAL
June 2018	3	0	10	101	15	770	0	23	161	2	1085
July 2018	3	0	10	99	15	756	0	23	151	2	1059
August 2018	3	0	9	99	16	761	0	23	149	2	1062
September 2018	4	0	8	96	16	727	0	24	147	2	1024
October 2018	4	0	6	93	17	711	0	24	142	1	998
November 2018	3	1	7	89	18	686	21	24	145	3	997
December 2018	1	0	8	88	18	679	24	25	150	0	993
January 2019	2	0	8	93	17	687	34	25	143	0	1009
February 2019	3	0	9	99	15	695	40	25	140	3	1029
March 2019	4	0	9	90	15	693	42	24	135	0	1012
April 2019	4	0	9	88	16	673	45	24	131	1	991
May 2019	3	0	9	88	16	690	0	23	143	0	972
TANF	Temporary N	Need to Aid to	Needy Fam	ilies (Colorad	o Works)	LEAP		Low Income	Energy Assis	stance Progra	am
DIVERSION	Colorado V	Vorks Divers	sion Program	n		CHILD CA	RE	Child Care	Assistance	Program	
OAP + HCA	Old Age Pe	ension + Hoi	me Care Alle	owance		FS		Supplemer	tal Nutrition	Assistance	Program
AND, SSI, SSA	Aid to Need	dy Disabled,	Social Seco	urity				(AKA Food	Stamps)		
HCBS	Home Care	e Based Ser	vices			EF		Employme	Employment First		
MED	Medicaid					GA		General As	sistance		



AGENDA ITEM - 7.b.

TITLE:

12:05 p.m.- 1:00 p.m. Lunch

Presented by: Time needed:

**PREPARED BY:** 

# **RECOMMENDED ACTION/MOTION:**

# **INTRODUCTION/BACKGROUND:**

# FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			



AGENDA ITEM - 8.a.

### TITLE:

Discussion of the Agricultural Greenhouse Gas Inventory Report.

**Presented by:** Mark Easter, Mark Easter Consulting LLC. **Time needed:** 60 mins

### **PREPARED BY:**

Mark Easter

### **RECOMMENDED ACTION/MOTION:**

### **INTRODUCTION/BACKGROUND:**

Email: Early Afternoon PresentationHi Carmen,mark.j.easter@gmail.comFYI - Please read the email thread below for this addition to the 6/26 BOCC meeting agenda.Kris Holstrom will attend, but I will be out of the country.Do you have enough info. here or do you want me to prepare a BOCC memo and upload to Novus?Please let me know what works best for you. Thanks. Janet

### FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			

**ATTACHMENTS:** 

Description Greenhouse Gas Inventory Upload Date 6/20/2019 Greenhouse Gas Inventory from Agriculture, Forestry and Other Land Uses for San Miguel County, Colorado

> Mark Easter<sup>1</sup>, Amy Swan, and Stephen Williams Mark Easter Consulting LLC, DBA Farm, Table & Sky 2820 Cherry Lane Fort Collins, CO 80521

Prepared for San Miguel County, Colorado February, 2019

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<sup>&</sup>lt;sup>1</sup> Corresponding Author: (970) 988-9274, Mark.J.Easter@gmail.com

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Discussion
Windbreaks/Shelterbelts
Land Reclamation
Irrigated and Dryland Cropping Systems
Irrigated Hay and Pasture Systems
Livestock
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# Acknowledgements

We are grateful to the representatives and staff of San Miguel County for their kind and careful attention to this project, and for this opportunity to assess greenhouse gas mitigation opportunities in their region. Thanks go to Kris Holstrom and the San Miguel County Commissioners for their interest in this work. Janet Kask from San Miguel County provided invaluable support. The Telluride Community Foundation provided important input on local and regional economic drivers for greenhouse gas mitigation in the food system, and helped to direct some of the analyses provided herein. NRCS Staff at field offices in Delta, Montrose, Dove Creek and Alamosa helped with information about regional cropping and livestock grazing practices, as did CSU Extension personnel on the western slope and on the Front Range. We are especially grateful to the farmers and ranchers who met with us or spoke with us over the phone over the course of this study and provided feedback and important details about their production systems.

# **Executive Summary**

Mark Easter Consulting, DBA Farm, Table, & Sky, prepared this greenhouse gas inventory for San Miguel County, Colorado, to meet two principal objectives:

- a) To quantify a baseline of existing greenhouse gases based on existing cropland, pasture, and rangeland land use and management in San Miguel County.
- b) Quantify the future GHG balance of agricultural lands relative to the baseline greenhouse gas emissions, based on existing agricultural production on cropland, hayland, pasture, and rangeland including livestock, and assess and quantify potential agricultural practices that can reduce greenhouse gas emissions.

The area of interest included private and public lands used for agricultural activities in San Miguel County, and agricultural lands in the upper San Miguel River watershed in Montrose County.

We utilized agricultural greenhouse inventory methods consistent with those used in the U.S. National Greenhouse Gas Inventory, and which are sanctioned by the U.S. Department of Agriculture and implemented by the NRCS in the COMET-Farm and COMET-Planner tools used to support this analysis. The inventory methods are consistent with those recommended by the Intergovernmental Panel on Climate Change (IPCC).

Our simulations predict that the total agricultural GHG emissions for San Miguel County, under current conditions and projected forward from 2018 to 2037, are 87,000 metric tonnes of carbon dioxide equivalents per year (87,000 Mg CO2e/yr), or 95,000 short (English) tons  $CO_2e/yr$ .

We simulated a number of potential agricultural practices with potential to reduce greenhouse gas emissions, sequester carbon in soils and trees, and otherwise mitigate global warming, including:

- Reducing tillage: Conversion from intensive tillage to reduced tillage or no tillage/strip tillage.
- Diversifying rotations: For example, introducing industrial hemp into a crop rotation.
- Intensifying rotations: For example, add industrial hemp into a fallow-wheat rotation to make it a fallow-wheat-hemp rotation, which increases the number of years crops are grown over the long term.
- Addition of compost as a soil amendment, and reducing or eliminating synthetic fertilizer.
- Restoring degraded rangeland.
- Shifting from extensive to intensive rotational grazing.
- Planting windbreaks/shelterbelts and restoring/expanding riparian buffers
- Mined land and landslide reclamation.

Where possible, we utilized life cycle assessment to inform the mitigation analysis about best practices to reduce total life cycle emissions. The boundary for the analysis was from the farm and/or ranch gate upstream. Embodied emissions from products or practices that contributed less than 5% to the known overall system emissions were not included. Embodied emissions from farm & ranch equipment and buildings were not included as data were not available. The principal products contributing upstream life cycle emissions were diesel fuel, fertilizer, and compost.

Several recommendations and potential best management practices emerged from this analysis:

- Planting trees in windbreaks/shelterbelts and riparian buffers has the greatest GHG mitigation potential of any system analyzed in this study (up to 8 Mg/ha, 3.6 tons/acre CO<sub>2</sub>e/yr carbon sequestration). This practice has great potential for cost reductions through cost-sharing programs like the NRCS EQIP program and the Colorado State Forest Service nursery seedling program.
- Depending on the type of vegetative cover used, reclaiming abandoned mines has GHG mitigation potential comparable to many of the cropland mitigation practices (up to 1.9 Mg/ha, 0.9 tons/acre CO2e/yr carbon sequestration), and potentially as high as windbreak and shelterbelt plantings (above).
- 3. Amending soils with compost, combined with converting to no tillage or strip tillage, offers the next most significant opportunity on a per-acre basis to reduce GHG emissions in irrigated and dryland croplands. Greenhouse gas emissions reductions ranging 1-7 Mg/ha (0.44-3.1 tons/acre) CO<sub>2</sub>e are possible from these practices individually or in combination.
- 4. Diversifying and/or intensifying crop rotations with industrial hemp could offer economic development opportunities that would have a neutral effect on the GHG balance of agricultural lands in the region.
- 5. Utilizing slow-release fertilizers and nitrification inhibitors is an effective practice to improve nitrogen use efficiency and reduce nutrient leaching and runoff in floodirrigated systems like those in San Miguel County. These practices have the low-cost and effective co-benefit of reducing soil nitrous oxide emissions, in the range of 0.11-0.2

Mg/ha (0.05-0.1 tons/acre) CO2e, while often saving the producers money in the long run.

- 6. Cattle production has the highest carbon footprint of the land uses analyzed in this study, due to enteric emissions. At the present time, the most cost-effective methods to reduce enteric emissions from animal protein production include:
  - Maximize forage quality through best management practices on rangeland, irrigated pastures, and irrigated hay.
  - Integrate pastured poultry into existing livestock, hay, and/or cropland systems, or convert from beef to pastured poultry production shows significant promise for reducing GHG emissions in production of animal protein.
  - Consider working with producers to combine grass-fed beef with grass-fed dairy operations, wherein milking and non-milking dairy animals are managed for both dairy and meat production, as a way to increase net overall economic activity while maintaining the GHG balance of grazing and animal systems.
- 7. The greenhouse gas balance of San Miguel County pasture and rangeland is unlikely to change if rangeland and pastures are managed well and kept in a good condition. The GHG balance of livestock grazing operations can be reduced by maintaining forage utilization in the range of 30-50%, timed to meet ecosystem needs.
- 8. The GHG balance of degraded rangelands and pasture could improve significantly by restoring degraded rangelands to native plant cover.
- 9. Developing land use policies that incentivize protection of high-carbon agricultural soils may lead to significant reductions in GHG emissions if existing high-carbon hay and pasture lands are protected, as converting these lands to developed uses could lead to a loss of 40% or more of ecosystem carbon (up to 140 Mg/ha, or 61 tons/acre CO<sub>2</sub>e) as carbon dioxide into the atmosphere.

# Introduction and Objectives

This report was prepared for the San Miguel County Board of County Commissioners, with two major objectives as described in the project Statement of Work:

- c) To quantify a baseline of existing greenhouse gases based on existing cropland, pasture, and rangeland land use and management in San Miguel County.
- d) Quantify the future GHG balance of agricultural lands relative to the baseline greenhouse gas emissions, based on existing agricultural production on cropland, hayland, pasture, and rangeland including livestock, and assess and quantify potential agricultural practices that can reduce greenhouse gas emissions.

The principal region of interest is San Miguel County, Colorado. Initial project scoping conversations conducted in April, 2018 indicated there is interest within the county regarding agricultural production in the upper San Miguel River watershed, in southern Montrose County, because a number of agricultural products purchased within San Miguel County are produced in that region. We expanded the geographic scope of the mitigations analysis to include this region.

Three overall activity classes drive the overall GHG balance of San Miguel County land use and management

## Ecosystem Carbon Change

Ecosystem carbon usually resides in a state of dynamic equilibrium in soils, trees, and other plants until land use change occurs on a piece of land. Most land use changes lead to a change in carbon stocks, many of which cause a net release of carbon into the atmosphere. For example, mature aspen forests in San Miguel County can be considered to be in a state of dynamic equilibrium, storing on average 74 metric tonnes (megagrams, or Mg) of carbon dioxide equivalents (CO<sub>2</sub>e) per hectare (ha) in roots, trunks, branches and leaves (Eggleston *et al.* 2006). This is equivalent to 33 tons/acre of CO<sub>2</sub>e. These ecosystems also store on average about 58 Mg/ha (26 tons/acre) of CO<sub>2</sub>e in the top layers of the soil (depending on the soil type, stand age, and stand condition). If an aspen forest in the county were cleared for some other land use, the majority of the carbon in those trees is typically lost to the atmosphere through decomposition, burning, or other processes. Over time the woody biomass and soil carbon stocks in the new land use system would reach a different equilibrium state, often lower than that in the native forest. The difference between these two equilibrium states is calculated as the net carbon emission (in the case of a carbon reduction in soils and trees) or a net carbon sink (in the case of higher soil and biomass carbon). The overall change rates in the San Miguel

County ecosystems are likely to be highly variable, however we can expect the changes to occur over periods of 20 or more years, depending on where the carbon resides.

#### GHG Emissions from Annual Land Management Activities

Land use management conducted on an annual or semi-annual basis such as tilling, planting and fertilizing cropland, and grazing livestock releases ecosystem carbon and nitrogen as greenhouse gases into the atmosphere in the form of carbon dioxide, or other GHG trace gases such as nitrous oxide and methane. We predict annual emissions from these activities using a combination of dynamic and statistical models. Changes in land management can have a major effect on soil carbon stocks. For example, some soils used to grow hay and graze livestock in San Miguel County are predicted to have stocks 350 or more metric tonnes of carbon dioxide equivalents (CO<sub>2</sub>e) per hectare (>156 short tons/acre). If those same soils were plowed to produce annual crops, and then plowed every year thereafter (which is common practice in many agricultural systems), more than 70 metric tonnes per hectare (> 32 short tons/acre) of CO2e could be lost to the atmosphere over time due to decomposition of the carbon in the soil as the soil carbon stocks reach a new equilibrium state under the new soil management.

#### **Embodied Emissions**

Many land use practices use equipment, energy, fuel, or soil amendments, which incur some net losses of greenhouse gases to the atmosphere when they are produced, manufactured, or distributed to the user. These life cycle *embodied* emissions are generally specific to that particular item or process. They can be large in some cases, and knowledge of these emissions can aid decision makers in making informed decisions about land use and management practices. For example, synthetic nitrogen and phosphorus fertilizers often require large amounts of energy to fix nitrogen from the atmosphere and manufacture the associated chemicals required to produce the fertilizer. Fossil fuels are generally required to create the energy needed in these processes, or as the raw material for the chemicals involved. Storing and transporting the materials to the user requires additional energy as well. The sum of these upstream emissions contributes to the total embodied emissions for the product or item being used.

The sum total of land management activities often involve a combination of atmospheric emissions as well as sequestration of carbon into plant biomass and soils via the uptake of carbon dioxide. We refer to the sum of these emissions and sequestration as the **greenhouse gas balance** (GHG balance) of the process. All amounts are reported in Megagrams (Mg, also known as *metric tonnes*) of carbon dioxide equivalents (CO<sub>2</sub>e), as well as short tons (English tons) per acre. We apply the IPCC Fifth Assessment figures 100-year time horizon estimates for global warming potentials of these gases (IPCC 2006), which are 1 for carbon dioxide, 34 for

methane, and 298 for nitrous oxide. Areas are provided in hectares and acres. A positive number indicates an emission into the atmosphere, and a negative number indicates a net sequestration of carbon in soil or biomass.

We addressed the above objectives in an analysis of the following GHG source categories, which include both biogenic emissions and sequestration from the management of soils and vegetation:

- Soil Organic Carbon
- Soil Nitrous Oxide
- Biomass Carbon
- Enteric Methane
- Manure Methane
- Manure Nitrous Oxide
- Non-CO2 Trace Gas Emissions from Biomass Burning
- Significant sources of upstream (embodied) GHG emissions

#### Geographic Area of Focus

The area of focus for the inventory is lands within San Miguel County used for agricultural activities, which include annual cropland, hay production, pasture and rangeland. Assessments were done on both private and public lands since livestock grazing extends onto to public lands. We inquired to the USFS and the BLM for spatial maps indicating grazing units within the county; however they were not able to provide those data, so our modeling efforts extended onto to all grasslands, shrublands and rangelands that have the potential to support grazing domestic livestock.

The area of focus also extended into a small portion of Montrose County to include agricultural regions in the upper San Miguel River watershed, extending from the town of Nucla upstream to the San Miguel County border. Stakeholders within both San Miguel and Montrose Counties indicated that producers in this area are important trading partners for San Miguel County residents, and therefore we expanded the analysis boundary for potential mitigation activities into that region.

# Methods

We predicted soil and biomass carbon stocks, and emissions of trace gases, using a combination of Tier 2 and 3 modeling approaches as classified by the Intergovernmental Panel on Climate Change (IPCC) (Eggleston *et al.* 2006), as follows

- For croplands, pasture, and rangelands, we utilized DayCent Ecosystem Model (Parton *et al.* 1998) in our analysis of soil carbon and nitrogen flux (IPCC Tier 3).
- For livestock emissions, we utilized the USDA Methods for Entity-Scale Greenhouse Gas Inventories (Eve *et al.* 2014).
- For agroforestry (windbreaks/shelterbelts and riparian buffers), we utilized data and models derived from the USFS Forest Inventory and Analysis (FIA) database, combined with regional tree planting prescriptions developed by the NRCS for the region (Ziegler *et al.* 2016, COMET-Farm Tool).

The availability of data was the primary factor determining the method. A Tier 2 analysis uses improved calculation techniques and region- or country-specific emission factor values in the calculations, and a Tier 3 approach utilizes region-specific dynamic models, such as our use of the DayCent model.

#### Land Use Change Analysis

To assess the effects of land use change on the greenhouse gas emissions, we overlaid the National Land Cover Database layers for 2006 and 2016 to assess changes in land cover over the most recent period (Homer *et al.* 2015). The principal land use change driver revealed by this analysis indicated that recently burned forested areas were interpreted as grasslands. The method predicted little land use change in the agricultural area of interest. The degree of change reported was within the margin of error reported for the data classes. Our conclusion is that land use change is contributing relatively little to the greenhouse gas emissions in San Miguel County, and for the purposes of this analysis it can be assumed to relatively unimportant.

#### Spatial Analysis

The location of a number of land use and management activities as well as climate and soil types for San Miguel County lands were determined using spatial data and GIS methods. Using remote sensing techniques, lands were divided into the following categories:

- Irrigated Alfalfa
- Irrigated corn-alfalfa
- Irrigated grassland/pasture
- Irrigated other hay, presumed grass-legume or grass
- Non-irrigated grassland (simulated as extensive grazing land/rangeland)
- Shrubland (simulated as extensive grazing land/rangeland)
- Winter wheat-fallow
- Winter wheat-fallow-sunflower

The weather data source used for all lands was the PRISM weather dataset (PRISM Climate Group 2018). Soil types were derived for all lands from the Soil Survey Geographic database (SSURGO) (USDA-NRCS 2018). Land cover change was determined from the National Land Cover Datatset for 2001-2011 (Homer et al. 2015). Crop rotations were derived from the USDA Cropland Data Layer (CDL) (USDA-NASS 2009-2016). Crop planting and harvest dates and fertilizer rates were derived through communication with Colorado State University Extension and staff at the Natural Resources Conservation Service.



FIGURE 1. SAN MIGUEL COUNTY LANDS CATEGORIZED INTO ANALYSIS GROUPS: AGRICULTURAL LANDS, NON-AGRICULTURAL LANDS, AND CONSERVATION EASEMENTS AND OTHER LANDS.

#### Soil C & N Modeling

#### Simulation of Current Practices on Agricultural Lands

We employed the DAYCENT Agroecosystem Model to perform simulations of the agricultural systems on the area of interest. DAYCENT simulates fluxes of C and N among the atmosphere, vegetation, and soil (Del Grosso et al., 2001; Parton et al., 1998). Recent crops (2008 – 2017)

reported in CDL for the region of interest were used to develop appropriate representative cropping or grazing systems for the different land use categories.

After discussions with growers, extension personnel, and NRCS staff, we determined that the current non-irrigated cropping systems could be adequately modeled as conventionally tilled fallow-winter wheat or fallow-wheat-sunflower rotations. Conventional tillage included chisel plow, rodweeder, small grain planter, and mechanical cultivations such as disking during the fallow period. The wheat system was modeled so that wheat was harvested from approximately one half of the non-irrigated cropping parcels each year of the simulation, and the fallow practice was modeled in the other half. In the fallow-wheat-sunflower systems, wheat, sunflower, and fallow practices were each modeled in one-third the modeled parcels in any given year.

Non-irrigated grazing systems (rangeland) were defined as extensive with heavy grazing occurring throughout the growing season, resulting in approximately 65% forage utilization. No fertilizer was applied to rangeland grazing parcels. "Extensive" grazing means that livestock are turned onto the pasture or rangeland blocks and remain there over long periods, typically months at a time.

In San Miguel County, major irrigated systems included alfalfa, pasture, and a combination of grass hay or mixed grass-legume hay systems. In Montrose county, corn-alfalfa rotations were the dominant irrigated cropping system.

Irrigated grass hay systems were fertilized every year with two harvests per year (July, September) and grazing in the fall. Mixed grass-legume hay systems were fertilized once every 5 years and had three harvests per year. The systems were assumed to be no-till, and mixed grass-legume hay was reseeded every five years.

Parcels simulated as irrigated pasture were set up as grasslands with annual fertilizer input. As with rangeland grazing systems, the baseline grazing conditions were defined as extensive with heavy offtake occurring throughout the growing season, resulting in approximately 65% forage utilization.

#### Simulation of Possible Future GHG Mitigation Scenarios

Mitigation practices included the following:

- Reducing tillage: Conversion from intensive tillage to reduced tillage or no tillage/strip tillage.
- Diversifying rotations: For example, introducing industrial hemp into a crop rotation.

- Intensifying rotations: For example, add industrial hemp into a fallow-wheat rotation to make it a fallow-wheat-hemp rotation, which increases the number of years crops are grown over the long term.
- Addition of compost as a soil amendment, and reducing or eliminating synthetic fertilizer.
- Restoring degraded rangeland.
- Shifting from extensive to intensive rotational grazing.
- Planting windbreaks/shelterbelts and restoring/expanding riparian buffers
- Mined land and landslide reclamation.

These mitigation practices were simulated separately, and in combination where applicable.

Adding cover crops in annual cropping systems are a very common and effective mitigation practice. There are, however, almost no opportunities to introduce cover crops into the cropping systems present in San Miguel and Montrose Counties. Cover crops are typically grown in the shoulder seasons and through the winter between economic crops as a way to produce additional biomass, keep a living root growing in the soil, capture leftover crop nutrients from the previous crop, and improve soil health. Effective cover crop practices in dryland fallow-wheat systems have not been perfected to the point where they could be recommended to farmers in the region (M. Schipanski, Colorado State University Dept of Soil and Crop Sciences, Personal Communication). The one dominant irrigated cropping system that includes annual crops (corn - 5 yrs alfalfa) already effectively has a cover crop in the system, since alfalfa is usually seeded into the rotation in the fall after the corn crop is harvested, and retained over winter in the rotation until corn is planted after the alfalfa crop has run its course several years later.

For compost amendments we simulated a fully-finished compost product with a carbon-tonitrogen ratio of 16, which has approximately 1% nitrogen on a wet-weight basis. We modeled the nitrogen applied as being available for plant growth as 20% within the first year, 6% in the second year, and 3% in the third year. No nitrogen credits were given for the fourth and late years following a compost addition (Cornell University 2005, Leikman and Lamond 2003, Davis and Westfall 2009). Compost amendment rates in the compost application scenario were calculated to meet 100% of the crops plant N needs. Compost amendment rates in actual practice vary between approximately 10 and 100% of plant growth needs, depending on the grower's objectives. The net GHG mitigation benefit that can be achieved with compost amendment will correspond approximately linearly with the amount applied relative to these application rates and the GHG balance of the reference scenario. For example, consider a compost amendment scenario that achieves a net GHG balance of -2.5 Mg/ha (-1.1 tons/acre) CO<sub>2</sub>e at 8 tons per acre applied compost under the future scenario, which was improving on a baseline practice that resulted in a net emission of +1 Mg/ha (+0.44 tons/acre) CO<sub>2</sub>e. If the producer instead applied 4 tons/acre of compost (50% of the modeled compost rate) and met the balance of the crop's nutrient needs with synthetic fertilizer, the net GHG balance difference would 50% of the difference between +1 Mg/ha (0.44 tons/acre) CO<sub>2</sub>e and -2.5 Mg/ha (-1.1 tons/acre) CO<sub>2</sub>e, or -0.75 Mg/ha (-0.33 tons/acre) CO<sub>2</sub>e.

Crop growth parameters in the DayCent simulation model are developed using data from controlled experiments that record details on plant growth, water and nitrogen use, and economic yield data. Little such data exists from North America for industrial hemp grown for fiber or seed. Industrial hemp has biomass production characteristics similar to corn, so we utilized the limited data we had available and modified existing corn growth parameters in the DayCent model to approximate those for industrial hemp (Adamovics *et al.* 2017, Das *et al.* 2017, Johnson *et al.* 2016, Roth *et al.* 2018, Vera *et al.* 2004, 2010). Lacking agronomic recommendations for the region, we assumed fertilizer rates similar to corn silage would be appropriate for industrial hemp, and inserted hemp to follow a small grain system in the rotations where it was grown.

#### Accounting for Embodied Emissions

In every GHG Source Category analyzed in this study, we attempted to include the most significant upstream life cycle (embodied) emissions associated with the land use practices. Embodied emissions are often also referred to as the "Embodied Energy" of a product, and they include the energy and associated GHG emissions made in the harvest of natural resource materials, manufacturing, marketing, and distributing a product. In the case of synthetic and metal materials, they also include the emissions required to mine and refine raw materials.

The boundary conditions in this analysis were the farm or ranch gate extending upstream to the source of products, fuel, and equipment used on the farm or ranch.

The two most significant classes of embodied emissions in this study are those associated with petroleum fuels, and those associated with agricultural amendments such as fertilizers, herbicides, and pesticides. The rules of thumb applied in this study are as follows:

 Petroleum fuels have an embodied emission rate of 21.7%, meaning for every gallon of fuel burned, an estimated equivalent of 0.217 gallons of fuel were burned in the mining, refining, marketing and distribution of that fuel to the location where it was burned (Burnham *et al.* 2013).

- Synthetic nitrogen fertilizer has a representative embodied emission rate of 6.9 kg CO<sub>2</sub>e for every kg of nitrogen in urea-ammonium nitrate and similar fertilizers (Johnson *et al.* 2013). This amount can vary depending on the actual type of fertilizer applied, ranging from 3.8 for anhydrous ammonia to over 9 for a variety of other types.
- Synthetic phosphorus fertilizer has a representative embodied emission rate of 6.4 kg CO<sub>2</sub>e for every kg of phosphorus in common phosphorus fertilizers used on the Colorado Front Range. This amount can vary depending on the actual type of phosphorus fertilizer applied and whether it is combined with N (e.g. MAN or DAN). A review of literature and discussions with extension personnel indicated that, in the San Miguel County region, phosphorus is typically applied at rates equaling approximately 60% of the N in fertilizer applied, calculated on a mass basis. This figure was used in predicting the embodied energy of phosphorus fertilizer applied to crops.
- Herbicides, pesticides, and fungicides have a wide range of embodied emissions, ranging from 6 to 31 kg CO<sub>2</sub>e for every kg of amendment applied (Table 1). Glyphosate represents the majority of the chemicals applied; therefor an average value of 30 kg CO<sub>2</sub>e kg<sup>-1</sup> of total agricultural chemicals applied is used in this study. In our analysis, the embodied emissions of these products typically contributed well below 3% of the total emissions in the cropping systems analyzed, and therefore were left out of the analysis.

 TABLE 1. EMBODIED EMISSIONS FOR THREE AGRICULTURAL CHEMICALS COMMONLY USED ON THE COLORADO

 FRONT RANGE.

<b>Chemical Applied</b>	Embodied Emissions (kg CO <sub>2</sub> e per kg applied)		
2,4,D	6		
Atrazine	13		
Glyphosate	32		

The embodied emissions associated with the manufacture and maintenance of farm equipment and buildings used in agricultural production are complicated by the difficulty in collecting information on such emissions, along with the GHG accounting problems posed by unknowns regarding the origin and life span of the buildings and equipment. We are not aware of existing studies that allow us to extrapolate such data to agricultural practices in San Miguel County, and so embodied emissions associated with equipment and buildings were not included in the analysis.

#### Livestock

Three major livestock GHG source categories apply to San Miguel County lands, described below. We applied the simulation models developed for U.S. livestock agriculture developed by

Eve *et al*. (2014), using emission factors specific to pasture and rangeland grazing systems, as follows:

- Enteric Methane: Methane emitted by livestock through the process of ruminating/ digesting plant material in their rumens or guts.
- Manure Nitrous Oxide: Nitrous oxide emitted during the process of storing, handling, transporting and decomposing manure. Conversations with producers and extension personnel indicated that the majority of livestock on San Miguel County lands are fed on rangeland and/or pasture. The simulation model methods used for livestock fed in such ways advise that manure nitrous oxide be included in the analysis of soil nitrous oxide emissions from parcels where livestock are grazed and/or fed. Therefore, we have modeled these emissions in the soil organic carbon and nitrogen modeling on rangelands and pasture, using the DayCent model.
- Manure Methane: Methane emitted during the process of storing, handling, transporting and decomposing manure (Eggleston *et al.* 2006). Methane emissions from manure in grazing systems are reported to be very small, and therefore the simulation models used in this analysis assume manure methane emissions to be zero.

Livestock census data were derived from the Census of Agriculture statistics for San Miguel County. We applied data specific to Colorado from Extension resources to estimate livestock weights, sex ratios, weaning dates and other applicable information required for the method (CSU Extension 2014).

The following values were used in the analysis:

- Pregnancy rate: 88%
- % of females lactating: 88%
- Ash content of manure: 20%
- Average daily weight gain: 0 for mature animals, 1.1 kg/head/day for calves
- Average live weight: 631 kg (1390 lbs.) for mature/replacement females, 909 kg (2000 lbs.) for bulls. Calves were assumed to weigh 205 kg (450 lbs.) at the end of the calendar year.
- Daily milk production for lactating cows: 5 kg (11 lbs.)/head/day at 2.7% milkfat content.
- Digestible energy from pasture/rangeland grasses: 55%.

# Results

# Notes Regarding Tillage, Synthetic and Organic Fertilizers, and Organic Systems

During conversations with stakeholders, numerous questions arose regarding the differences in the GHG balance between conventional and organic crop production systems. The section that follows is intended to offer information independent of those issues.

Extension literature indicates there are myriad different factors influencing farmers' and ranchers' decisions about cropping systems, including equipment and labor costs, interactions between soils/crops/climate, weed and pest management needs, nutrient and residue management needs, market demands, and policies regarding genetic technologies utilized in seed production. Whereas there are key differences in the types of amendments and farm chemicals used between organic and conventional systems, from the GHG balance perspective the two most important factors are the extent of tillage and the type of soil amendments used to meet crop nutrient needs – specifically synthetic fertilizer, manure, compost, or concentrated organic fertilizers. Growers using organic systems often rely on tillage to manage weeds. That said, practical no-till organic systems are emerging in combination with cover crop utilization (Rodale 2014). Growers in non-organic, tilled and no-tillage systems often rely on broad-spectrum herbicides for weed management. Manufactured, pelletized organic fertilizers are available for organic crops, and organic growers tend to use those products combined with manure/compost and/or cover crops. Conventional growers tend to use synthetic fertilizers. There are GHG balance trade-offs for each of these practices.

In the results that follow, the presence of compost in the rotation can be regarded as a surrogate for organic cropping systems. For example, the GHG balance of a conventional practice crop system using conventional/heavy tillage and manure/compost will have virtually the same GHG balance as an organic system using the same type of tillage. Likewise, a no-tillage system using herbicides and compost/manure will have a very similar GHG balance to an organic no-tillage system. The driving factors are, again, the use of manure/compost or synthetic fertilizers, and the type of tillage involved. Exclusive of compost, manure, and fertilizers, the energy required and embodied energy associated with the manufacture, distribution, and application of herbicides and pesticides in conventional systems is relatively small and is comparable to the energy and embodied energy associated with organic and biodynamic amendments and chemicals used in organic systems. Our previous work indicates the total embodied emissions associated with farm chemicals represents less than 3% of the total system emissions, and are not substantially different between organic and conventional systems, and therefore are not analyzed in this work (Easter *et al.* 2014).

# Simulation Results

A full list of detailed results on these current baseline and possible GHG mitigation scenarios are in Appendix 1. Overall results by land use category are shown in Table 2.

TABLE 2. LAND USE AND MANAGEMENT CATEGORIES MODELED IN SAN MIGUEL AND MONTROSE COUNTIES, AND ASSOCIATED CURRENT GHG BALANCE FOR THOSE PRACTICES. NOTE THAT A POSITIVE NUMBER INDICATES A NET EMISSION TO THE ATMOSPHERE, AND A NEGATIVE NUMBER INDICATES A NET SEQUESTRATION.

	Land Use &		Current GHG Balance
<u>County</u>	<b>Management</b>	Area (ha/acres)	<u>(Mg-yr / tons-yr CO2e)</u>
San Miguel	Irrigated Alfalfa	4,349/10,742	1,609/1,773
San Miguel	Non-irrigated grassland	24,190/59,749	12,578/13,861
	(modeled as extensive		
	grazing land)		
San Miguel	Irrigated other hay,	190/469	-74/-82
	presumed grass-		
	legume or grass		
San Miguel	Shrubland (modeled as	100,761/248,880	52,395/57,739
	extensive grazing land)		
San Miguel	winter wheat-fallow	1,027/2,536	503/554
San Miguel	winter wheat-fallow-	399/985	203/224
	sunflower		
San Miguel	Livestock Grazing	Re: grazing lands	19,379/21,356
		described above	
Montrose	Irrigated alfalfa	3,476/8,586	1,216/1,340
Montrose	Irrigated corn silage-	78/193	314/346
	alfalfa		
Montrose	Irrigated	668/1,650	-320/-353
	grassland/pasture		
Montrose	Irrigated other hay,	351/867	77/85
	presumed grass-		
	legume or grass		
Total			87,883/96,846

San Miguel County contains approximately 130,900 ha (323,323 acres) of lands with the potential for some type of agricultural use, the majority for livestock grazing (Table 2). Figure 2 shows a map of predicted soil organic carbon stocks in the upper layer of the agricultural soils in San Miguel County in 2017. Figure 3 is a map of the net GHG balance of cropland management for 2008-2017. Figure 4 is a map of the predicted net GHG balance of cropland management for 2018-2037.



FIGURE 2. SOIL ORGANIC CARBON STOCKS (MG  $CO_2E/HA$ ) IN 2017 ON SAN MIGUEL COUNTY LANDS IN THE 1ST 20CM OF THE SOIL PROFILE.



FIGURE 3. NET GHG BALANCE (MG CO<sub>2</sub>E/HA/YR) FOR 2008-2017 ON SAN MIGUEL COUNTY AGRICULTURAL LANDS.



FIGURE 4. PREDICTED NET GHG BALANCE IN SAN MIGUEL COUNTY, CO FOR 2018-2037, ON LANDS UTILIZED FOR LIVESTOCK GRAZING, HAY AND CROP PRODUCTION.

The principal factors affecting GHG emissions from cropland management are fertilizer/nutrient amendment type and management, tillage, use of cover crops, and residue management. The actual emissions from these practices can vary widely depending on the interactions of crops, climate, and soils in a particular region (Paustian et al. 1997). To assess potential best management practices for GHG reductions on irrigated cropland we simulated different combinations of these factors, including:

- Tillage: We evaluated the effects of reducing tillage by modeling the GHG balance of conventional, reduced, and no tillage systems.
- Conversion from synthetic fertilizers to compost: We replaced synthetic N fertilization with manure/compost in amounts that meet the nutrient requirements of the crops and maintain crop yields.
- Diversify/intensify crop rotations: We added hemp for fiber and hemp for seed to rotations, including both irrigated and non-irrigated systems.

A detailed summary of the current emissions and mitigation potentials in different land use categories follows. All analyses that follow involve a comparison against the current baseline practice.

# Rangeland Grazing

Conversations with growers, stakeholders, and extension personnel indicated that extensive rangeland grazing is the most significant agricultural practice in San Miguel County. Soils and conditions range from loamy-gravelly soils in mid-to-high elevation meadows in the eastern portion of the county, to loamy-sandy soils in the mid-elevation, semi-arid grasslands and shrublands in the central and western parts of the county. Soil parent materials include volcanic, metamorphic, and sedimentary rocks, leading to a wide variety of chemical characteristics and fertility profiles in the soil.

Average net baseline emissions averaged across this land use from the baseline rangeland grazing scenario are approximately 0.52 Mg/ha (0.23 tons/acre) CO<sub>2</sub>e/ha (Figure 5). The simulation models predict an overall small but consistent loss of soil carbon, based on the simulation scenario of 65% of biomass utilization in an extensive grazing system.



FIGURE 5. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES FOR NON-IRRIGATED GRAZING LANDS (RANGELAND) IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

Through conversations with stakeholders, we simulated two mitigation scenarios to assess the potential benefits of different grazing regimes for improving on the GHG balance of these rangeland grazing practices. Both involved high-intensity, short-rotation grazing at short (21 day) intervals with a goal of 50% (moderate) to 65% (intensive) forage utilization rates. The

simulation model results indicate that neither of these potential mitigation scenarios predict a significant reduction in emissions, and neither predicts a reversal of soil carbon loss. Converting to short-rotation grazing regime with high forage utilization (65%) leads to a worse GHG balance, whereas a similar practice with moderate forage utilization (50%) leads to a slightly better GHG balance.

These findings are consistent with research on the effects of livestock grazing in western rangelands (Sanderson *et al.* submitted, in review). This paper was the product of a workshop held with leading experts in this field, during which scientists evaluated and debated the potential for grazing regimes to influence carbon sequestration in soils. Two key findings from the workshop are especially pertinent to San Miguel County:

- Improvements in soil carbon stocks due to changes in grazing regimes in western rangelands tend to be limited to where livestock are used as a tool in combination with other practices to restore highly degraded lands. When managed effectively in such cases, an intensive, rotational grazing system can be very effective in achieving restoration goals. On rangelands in a nominal state, however, where forage plant cover is maintained, the grazing regime does not appear to effect soil carbon stocks (Sanderson *et al.* submitted, in review, Follett *et al.* 2014).
- The most significant activity grazing land managers can take to improve the GHG balance on grazing lands is to ensure forage utilization remains in the light-to-moderate range (30-50%) and vegetative cover on rangeland soils is maintained.

Protecting rangeland soils from degradation is a critically important GHG mitigation practice. The predicted soil carbon stocks in rangeland soils throughout the study area range from 60-350 Mg/ha (26-154 tons/acre) CO<sub>2</sub>e, depending upon the elevation and soil type. Soils degraded by poor grazing practices are predicted to lose 30% or more of their soil carbon stocks in the long term, or 26-105 Mg/ha (11.7-46.2 tons/acre) CO<sub>2</sub>e (Eggleston *et al.* 2006). Restoring degraded rangeland soils in this region has the potential to sequester an equivalent amount of soil carbon as was lost through rangeland degradation. Simulation models and experimental data indicate that recovery of such soil carbon stocks in degraded rangelands are predicted to take 30-50 years (Paustian group, unpublished data).

Converting rangelands from agricultural uses to developed uses effects soil carbon stocks in a way similar to erosion and soil degradation. The IPCC predicts a long-term loss of 40% of soil carbon stocks when grasslands are converted to developed land uses. Maintaining these lands in agricultural uses has the potential to prevent soil carbon stock losses of 24-140 Mg/ha (11-62 tons/acre)  $CO_2e$ .

### Irrigated Pasture

Conversations with stakeholders indicated that irrigated grasslands in the Norwood Area and in the San Miguel River Valley are often managed for livestock grazing. We simulated grazing in these areas like those on rangelands, but with added irrigation during the growing season and fertilizer additions described in Appendix 1. The simulation results are shown in Figure 6.



FIGURE 6. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES FOR IRRIGATED PASTURE IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

Unlike with rangeland grazing, our simulations predict a combination of low-level soil carbon sequestration combined with higher soil nitrous oxide emissions than in rangeland grazing, with a predicted net GHG balance similar to that of rangeland grazing. Predicted soil nitrous oxide emissions from fertilizer and manure overcome the soil carbon sequestration to produce a net GHG balance of 0.7-0.73 Mg/ha (0.31-0.32 tons/acre) CO<sub>2</sub>e. Simulations suggest that the three systems modeled (extensive, rotational-moderate utilization, rotational-heavy utilization) appear unlikely to significantly change the overall GHG balance of the system. Simulations indicate that amending soil with compost has the overall GHG mitigation potential, predicting a net GHG balance of -0.54 Mg/ha (0.24 tons/acre) CO<sub>2</sub>e. This simulation predicts an overall improvement of -1.29 Mg/ha (-0.57 tons/acre) CO<sub>2</sub>e compared with the baseline practice.

Where slow-release fertilizers or nitrification inhibitors are used with synthetic fertilizers, an overall reduction in soil nitrous oxide emissions due to fertilizer use is possible (see the Cropland section under Potential Best Management Practices).

#### Irrigated Grass Hay and Grass-Legume Hay

Conversations with stakeholders and extension staff indicated that significant land areas in north-central San Miguel County are in irrigated grass hay and mixed grass-legume hay systems. We simulated these systems wherever the Cropland Data Layer predicted "other hay" as a land use system, using fertilizer additions described in Appendix 1, with up to three hay harvests per year, with livestock grazing on the grass hay in the late summer and fall after the final hay harvest (Figure 7, Figure 8).



FIGURE 7. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES ON GRASS HAY SYSTEMS IN SAN MIGUEL COUNTY, CO FOR 2018-2037.



FIGURE 8. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES ON IRRIGATED MIXED GRASS-LEGUME HAY SYSTEMS IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

The net simulated GHG balance of the grass hay system is 0.48 Mg/ha (0.21 tons/acre) CO<sub>2</sub>e, and 0.33 Mg/ha (0.15 tons/acre) CO<sub>2</sub>e in the mixed grass-legume hay system. Utilizing compost in these systems has the potential to improve the net GHG balance by up to -4.41 Mg/ha (-1.97 tons/acre) CO<sub>2</sub>e in grass hay systems, and up to -.36 Mg/ha (-.016 tons/acre) CO<sub>2</sub>e in mixed grass-legume hay systems. Both systems show potential net carbon sequestration. The principal difference in the mitigation potential of these systems is in the amount of compost applied. The mixed grass-legume system requires less synthetic fertilizer, and therefore would require less compost as a soil amendment and thus exhibits less capacity to sequester soil carbon through this practice, relative to the baseline practice.

As with previously-described systems, slow-release fertilizers or nitrification inhibitors used in conjunction with synthetic fertilizers can reduce soil nitrous oxide emissions (see the Cropland section under Potential Best Management Practices).

### Dryland Cropping Systems

Fallow-wheat and fallow-wheat-sunflower cropping systems dominate the agricultural land use near Egnar in southwest San Miguel County. The fertilizer use rates used in the simulation for these systems are described in in Appendix 1. Besides the baseline cropping system of fallowwheat or fallow-wheat-sunflower, we simulated tillage reduction, cropping intensification with industrial hemp for fiber or seed, and amending soil with compost in order to assess overall GHG mitigation potential in these systems (Figure 9).



FIGURE 9. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES ON DRYLAND CROPPING SYSTEMS IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

Converting from conventional tillage to no tillage or strip tillage has the potential to reduce net emissions in this system from 0.66 Mg/ha (0.3 tons/acre) CO<sub>2</sub>e to 0.21 Mg/ha (0.09 tons/acre) CO<sub>2</sub>e. The simulation models predict similar reductions when cropping intensification with hemp for seed are combined with conversion to no tillage or strip tillage. Introducing industrial hemp for seed or fiber through cropping intensification does not significantly change the net GHG balance in these systems. The simulations predict that amending soil with compost and converting to no till may reduce the net GHG emissions by 2.2 Mg/ha (-1.02 tons/acre) CO<sub>2</sub>e compared with conventionally tilled fallow-wheat baseline.

As with previously-described systems, slow-release fertilizers or nitrification inhibitors used in conjunction with synthetic fertilizers can reduce soil nitrous oxide emissions (see the Cropland section under Potential Best Management Practices).

### Irrigated Cropland

Some of the greatest overall GHG mitigation benefits on a per acre basis on croplands can be achieved the irrigated corn-alfalfa rotations in the upper San Miguel River watershed. The fertilizer rates used in the simulation for these systems are described in in Appendix 1.The simulation models predict a net GHG balance of 0.75 Mg/ha (0.33 tons/acre) in the baseline system (Figure 10).



FIGURE 10. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT MANAGEMENT PRACTICES ON IRRIGATED CROPLAND IN SAN MIGUEL AND MONTROSE COUNTIES, CO FOR 2018-2037.

The simulation models predict that converting from intensive tillage to no tillage or strip tillage reduces the GHG balance by 0.45 Mg/ha (0.20 tons/acre) CO<sub>2</sub>e. Adding compost as a soil amendment while converting to no tillage or strip tillage reduces net emissions by 2.0 Mg/ha (0.88 tons/acre) CO<sub>2</sub>e. Cropping Intensification with hemp for seed or fiber does not significantly change the net GHG balance of the system. The simulation models predict the greatest benefits are seen with a combination of strategies. Combining conversion to no tillage or strip tillage, cropping intensification with hemp for seed, and applying compost yields a net overall GHG balance of up to -6.53 Mg/ha (-2.91 tons/acre) CO<sub>2</sub>e, reducing overall system emissions by 7.28 Mg/ha (3.24 tons/acre) CO<sub>2</sub>e compared with the baseline.

As with previously-described systems, slow-release fertilizers or nitrification inhibitors used in conjunction with synthetic fertilizers can reduce soil nitrous oxide emissions (see the Cropland section under Potential Best Management Practices).

### Planting Windbreaks/Shelterbelts and Riparian Buffers

The simulation models predict planting trees in windbreaks and shelterbelts and riparian buffers will have the greatest carbon sequestration potential on a per acre basis of any practice analyzed in this study (Figure 11).



FIGURE 11. PREDICTED NET GREENHOUSE GAS BALANCE OF DIFFERENT TREE PLANTING SYSTEMS FOR CROPLAND AND GRAZING LAND IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

Windbreak/shelterbelt composition, structure and density used in this analysis were developed and recommended by the NRCS for the region as part of a carbon sequestration rural appraisal study conducted for the agency in 2007 (Paustian Research Group, NREL, unpublished). The riparian buffer prescriptions simulated were a combination of quaking aspen and gambel oak at a density of 218 trees per acre each. Windbreak/shelterbelts simulated are 4-row systems composed of quaking aspen, ponderosa or lodgepole pine, blue spruce, and rocky mountain juniper at densities of 64 trees per acre each. Soil nitrous oxide emissions were predicted based on those from rangeland grazing systems, the nearest surrogate for this system. We anticipate little to no change in soil carbon stocks is likely after trees are planted into these cropland and pasture systems in San Miguel County (Eggleston *et al.* 2006).

#### Livestock

The NASS Agricultural Statistics Service reports an average of 7,331 head of cow-calf beef cattle in San Miguel County between 2013 and 2017. Extension, NRCS personnel, and livestock producers confirmed the majority of cattle are in cow-calf operations with a small number of grass-finished beef producers raising beef stockers to market weight. Based on this census, we modeled the following livestock populations:

- Cow-calf pairs: 6584 (95% of cow-calf pair population)
- Bulls: 347 (5% of the cow-calf pair population)
- Beef Stockers on Grass-Finished Systems: 200 heifers, 200 steers.

As a GHG mitigation scenario, we simulated pastured broiler chickens based on practices we observed growers using in San Miguel County. In the Livestock emissions models, the cattle were pastured on grass from May through mid-October, and fed a mixture of grass hay supplemented with a proportion of alfalfa hay on winter pasture from mid-October through April. Poultry were pastured from May through mid-October. The emissions models utilized in the COMET-Farm system predict the baseline emissions from livestock in San Miguel County to produce about 19,379 Mg (21,361 short tons) CO<sub>2</sub>e/year (Eve *et al.* 2014, COMET-Farm System Calculations). Figure 12 shows the relative difference in the livestock categories on the basis of live animal weight. Simulation models predict that converting from beef to sheep production is likely to increase GHG emissions through enteric fermentation by as much as 80%, and hence is not a likely mitigation strategy.



FIGURE 12. PREDICTED ENTERIC METHANE EMISSIONS FROM DIFFERENT LIVESTOCK PRODUCTION SYSTEMS IN SAN MIGUEL COUNTY, CO FOR 2018-2037.

The livestock emissions shown are entirely from enteric methane, which is the methane produced in the cattle's rumen as they digest grass and which they belch out while ruminating (often referred to as "chewing their cud"). There are significant trace gas emissions from livestock manure, including both nitrous oxide, and methane, and those emissions are accounted for in the DayCent model predictions for livestock grazing on irrigated pasture and rangelands. No studies were found that evaluated soil nitrous oxide emissions from pasture-based poultry, and therefore we are unable to offer specifics about the differences between trace gas emissions between pastured beef and poultry systems. Based on the IPCC Tier 1 models, we predict the overall contribution of manure trace gas emissions on pasture systems to be small relative to the enteric emissions.

Information on fuel use, supplemental feed, or amendments used to support livestock operations were not available. Therefore, no calculations for fuel use or embodied emissions are available for livestock.

#### Land Reclamation

Discussions with stakeholders indicate that there may be significant potential for carbon sequestration on abandoned mine lands. Previous work by the NRCS and the Paustian Research Group at Colorado State University indicate potential for net soil carbon sequestration on

reclaimed lands in the range of 1.05-1.9 Mg/ha (0.45-0.84 tons/acre) CO<sub>2</sub>e (Table 3) (COMET-Planner Tool).

Approximate Carbon Sequestration and Greenhouse Gas Emission Reductions						
Practice	Climate zone	Carbon Dioxide (Mg CO2e/acre/yr) Average (Range)	Nitrous Oxide (Mg CO2e/acre/yr) Average (Range)	Methane (Mg CO2e/acre/yr) Average (Range)		
Land	Dry/semiarid	1.05 (0.68 – 1.40)	Not estimated	Not estimated		
Reclamation – Abandoned Mine Land	Moist/humid	1.90 (1.02 – 3.65)	Not estimated	Not estimated		
Land	Dry/semiarid	1.05 (0.68 – 1.40)	Not estimated	Not estimated		
Reclamation – Currently Mined Land	Moist/humid	1.90 (1.02 – 3.65)	Not estimated	Not estimated		
Land	Dry/semiarid	0.73 (0.47 – 1.09)	Not estimated	Not estimated		
Reclamation – Landslide Treatment	Moist/humid	1.90 (1.02 – 3.65)	Not estimated	Not estimated		

TABLE 3. POTENTIAL FOR SOIL CARBON SEQUESTRATION IN RECLAIMING MINED LANDS AND LANDSLIDES.

The predicted carbon sequestration rates are based on soil rehabilitation and planting to grasses and forbs. Planting the same area to trees would increase the GHG mitigation potential by sequestering carbon in woody vegetation, at rates possibly similar to those for windbreaks/shelterbelts or riparian forest plantings, through carbon sequestration in trees. The tree species mix used in land reclamation is likely to be different from those recommended for agricultural lands, and would depend upon the site conditions, soils, and elevation involved.

## Embodied Emissions

Figure 13 shows an example profile of embodied emissions in irrigated cropping systems (Easter *et al.* 2014). The embodied GHG emissions are divided into six categories, four of which are treated in this study:

- Energy and process emissions in N fertilizer manufacturing (Johnson et al. 2013).
- Energy and process emissions in P fertilizer manufacturing (Johnson et al. 2013).
- Emissions from the production of compost (IPCC 2006).
- Indirect emissions from the production, manufacture, and distribution of diesel fuel and gasoline (Burnham et al. 2013). The two practices affecting emissions changes from diesel fuel use are tillage reduction, and use of compost. The emissions differences are

real and are quantifiable. The differences tend, however, to be small relative to other practices and are not represented well in the graphical images in this report. See the section titled "Fuel Use in Cropping Systems" for more discussion of this topic.

Other emissions associated with agriculture are shown below, but were not addressed in this study or are treated in a separate section that follows:

- Energy required to pump irrigation water used in center pivot and/or other sprinkler systems. Insufficient data were available to allow us to assess this issue. We expect it to contribute less than 1% of the emissions in any given system, and is unlikely to change significantly in response to mitigation practices analyzed in this work.
- Energy and process emission in herbicide/pesticide manufacturing and from the production of seed (Audsley *et al.* 2009). The emissions associated with these products are typically less than 3% of the total system emissions, and are therefore not treated in this analysis (Easter *et al.* 2014).



FIGURE 13. EXAMPLE EMBODIED EMISSIONS FROM IRRIGATED CROPLAND IN EASTERN COLORADO.

## Fuel Use in Cropping Systems

Energy emissions changes associated with tillage reduction are well-quantified and understood, and represent real reductions in GHG emissions from fossil fuel use. They were not shown in

the graphics as the relative magnitude is small relative to the other potential emissions reductions.

The fuel required for these systems changes with the type of tillage and whether or not manure/compost is applied. Estimated diesel fuel requirements range from 9.7 gallons/acre/year (0.12 Mg / 0.13 tons) for conventional/heavy-tilled, alfalfa-row crop systems to 8.9 gallons/acre/year (0.11Mg / 0.12 tons) in no-tillage systems. Grass hay systems and grass-legume hay systems typically have little or no tillage after the crop is established. Alfalfa hay systems typically have to be renewed every 5-7 years, however even with those tillage events, energy use is dominated by harvest operations and so fuel use is typically consistent at about 9.9 gallons/year (0.125 Mg, 0.13 ton  $CO_2e/yr$ ) (USDA Energy Calculator 2014).

In dryland cropping systems the estimated diesel fuel requirements range from 6.5 gallons/acre/year (0.08 Mg / 0.09 tons) for conventional/heavy tilled fallow-wheat to 3.8 gallons/acre/year (0.05 Mg / 0.06 tons) for no-tillage systems. In contrast, the crop production intensification scenario (fallow-wheat-hemp) requires about 5.7 gallons/acre/year (0.07 Mg / 0.08 tons) (USDA Energy Calculator 2018).

The emissions associated with hauling and spreading compost is small relative to other emissions involved in cropping systems, averaging about 0.25 gallons of diesel fuel per ton (0.0031 Mg, 0.0034 ton  $CO_2e$ ) with approximately two-thirds of that required for hauling and approximately one-third required for spreading (Easter *et al.* 2014).

# Discussion

# Windbreaks/Shelterbelts

The simulation models predict that planting trees in windbreaks/shelterbelts and riparian buffers has the greatest GHG mitigation potential of any system analyzed in this study. This practice has great potential for cost reductions through cost-sharing programs like the NRCS EQIP program and the Colorado State Forest Service nursery seedling program. The conservation benefits cross multiple thresholds besides carbon sequestration, including providing pollinator and native wildlife habitat, reducing wind erosion, improving crop and forage yields in adjoining fields, sheltering livestock, and improving quality of life when planted near homes and other buildings (Brandle *et al.* 2004).

#### Land Reclamation

Depending on the type of vegetative cover used, reclaiming abandoned mines has GHG mitigation potential comparable to that for some of the cropland mitigation practices, and potentially as high as windbreak and shelterbelt plantings (COMET-Planner Tool). The potential

opportunities in this space and co-benefits that come from land reclamation (e.g. air and water quality improvements, scenic improvements, brownfield development) lead us to recommend San Miguel County explore these possibilities further.

# Irrigated and Dryland Cropping Systems

Amending soils with compost, combined with converting to no tillage or strip tillage, offers the next most significant opportunity on a per-acre basis to reduce GHG emissions in irrigated and dryland croplands. Diversifying and/or intensifying crop rotations with industrial hemp could offer economic development opportunities that would have a neutral effect on the GHG balance of agricultural lands in the region. Utilizing slow-release fertilizers and nitrification inhibitors is an effective practice to improve nitrogen use efficiency and reduce nutrient leaching and runoff in flood-irrigated systems like those in San Miguel County. These practices have the low-cost and effective co-benefit of reducing soil nitrous oxide emissions, in the range of 0.11-0.2 Mg/ha (0.05-0.1 tons/acre) CO2e, while often saving the producers money in the long run (Easter *et al.* 2014).

It is important to note that sufficient quantities of compost seem unlikely to be available immediately to satisfy the GHG mitigation potential of these practices in San Miguel County. When considering sources for compost, San Miguel County should consider developing a composting program that utilizes organic waste diverted from landfills or dairy manure lagoons. Doing so would stack additional GHG reduction benefits to the overall GHG reduction potential of adding compost in these systems (Easter *et al.* 2014.)

## Irrigated Hay and Pasture Systems

Amending soils with compost and utilizing low-cost slow-release fertilizers and/or nitrification inhibitors offer the greatest immediate GHG mitigation benefits for irrigated hay and pasture systems. These cropping systems have some of the highest soil carbon stocks of any agricultural lands analyzed in this study. Whereas land development and land use conversion do not appear to be significant sources of greenhouse gases in San Miguel County, some land use conversion is apparent in these land uses systems. Of all of the practices analyzed in this study, the highest soil carbon stock losses and GHG emission rates on a per acre basis could occur if these highcarbon lands are converted to developed uses. San Miguel County may want to consider land use policies that encourage land development, when it occurs, on low-carbon and lowproductivity lands.

#### Livestock

Cattle production has some of the highest GHG emission rates of any livestock, primarily due to emissions from enteric fermentation (Eggleston *et al.* 2006, Garnett *et al.* 2017). Emissions from

enteric fermentation are directly related to the quality and overall digestibility of their feed. Livestock raised on well-maintained rangeland and irrigated pasture in San Miguel County will have lower emissions compared with those raised on poor quality rangelands or pastures. Direct enteric methane emissions tend to be lower in confined animal feeding operations on a per-pound basis of weight gain, however manure methane and manure nitrous oxide emissions tend to be higher in those situations, and in poorly-managed operations can be on par with enteric methane emissions (Eggleston *et al.* 2006). Additionally, the embodied emissions associated with feed grain and other feed amendments as well as additional equipment and energy costs raise the net GHG balance of such livestock feeding operations.

At the present time, no practical, cost-effective technologies exist to reduce enteric emissions from beef cattle production other than to maximize forage quality through best management practices on rangeland, irrigated pastures, and irrigated hay. There is a great deal of research into potential technologies to reduce enteric emissions, and whereas some hold promise, he doesn't expect cost-effective technologies to be available for at least five years (S. Archibeque, Colorado State University Dept of Animal Science, personal communication). It could be helpful for San Miguel County to revisit this issue on a recurring basis so that technologies can be leveraged if or when they become available.

Based on our observations of pastured poultry systems in place in the Norwood area and the reduced net emissions involved, integrating pastured poultry into existing livestock, hay, and/or cropland systems, or converting from beef to pastured poultry production shows significant promise for reducing GHG emissions in production of animal protein.

Recent research into integrated dairy/beef production systems show opportunities to reduce the emissions intensity of animal protein (Blackstone *et al.* 2016). By "emissions intensity", we mean the total GHG emissions associated with products like a gallon of milk, a pound of cheese, and/or a pound of meat. By combining grass-fed dairy operations with beef production, wherein milking and non-milking dairy animals are managed for both dairy and meat production, producers can potentially increase the net overall productivity and economic activity in their operations while maintaining the GHG balance of their systems. Converting from pastured systems to dairy production in concentrated feeding operations could lead to overall higher emissions due to combinations of soil carbon loss, embodied feed emissions, and methane emissions from manure lagoons, and hence may not be a good GHG mitigation strategy.

# Recommendations and Potential Best Management Practices

Following is a summary of potential best management practices San Miguel County may consider prioritizing for land use and management:

### Cropland

- Reducing tillage on conventionally-managed crops has an almost immediate benefit to improve the GHG balance of irrigated and non-irrigated croplands (Paustian *et al.* 1997). New techniques that integrate reduced and no-tillage systems with organic production are becoming more widespread (Schonbeck 2010, Rodale Institute 2014)
- Use compost or livestock manure as a soil amendment and reduce synthetic fertilizer applications proportionally to account for the nitrogen, phosphorus, potassium, and trace nutrients present in the amendment. When adding compost to fields, apply on the surface when the soil surface is not frozen.
- Crop production intensification is likely to produce an immediate improvement in the GHG balance of non-irrigated lands (Kaan *et al.* 2014).
- When using synthetic fertilizers:
  - Apply to soil test, so the amount of nutrients necessary for economic yields are available and excess nitrous oxide and embodied emissions may be avoided.
     Precision agriculture can aid in meeting this need.
  - Time fertilizer applications to avoid major precipitation or irrigation events by at least one week, to avoid a flush of nitrous oxide emissions that occur when precipitation or irrigation coincides with fertilization.
  - Slow-release fertilizer is becoming more widely available, and its use has the potential to reduce trace GHG emissions by 35-38% (Denef et al. 2011).
  - As with slow-release fertilizers, nitrification inhibitors are starting to become more widely available. Utilizing them can reduce nitrous oxide emissions by an amount comparable to slow-release fertilizers (35-38%) (Denef et al. 2011).
  - Applying fertilizers sub-surface by direct injection, drilling, or sub-soil placement has the potential to reduce indirect nitrous oxide emissions from leaching and volatilization by as much as 35%. Direct nitrous oxide emissions may also be reduced, although current research reports variable results (Denef et al. 2011).

#### Pasture, Rangeland, and Livestock

The GHG balance of San Miguel County pasture and rangeland is unlikely to change as long as rangeland is managed well and kept in a non-degraded condition. The GHG balance of degraded rangelands and pasture could improve significantly by restoring such lands to native plant

cover. The GHG balance of livestock grazing operations can be reduced by maintaining forage utilization in the range of 30-50%, timed to fit within ecosystem needs (Cook *et al.* 1997).

Developing land use policies that incentivize protection of high-carbon agricultural soils may lead to significant, long-term reductions in GHG emissions if existing high-carbon hay and pasture lands are protected.

### Windbreaks/Shelterbelts and Riparian Buffers

San Miguel County can help achieve multiple GHG mitigation along with co-benefits by identifying perennial and ephemeral streams that no longer have riparian vegetation, and prioritizing those areas for re-establishment of riparian buffers. In addition, consulting with NRCS and CSU extension regarding a priority windbreak/shelterbelt program can help achieve GHG mitigation along with significant co-benefits for most agricultural systems, at relatively low cost.

### Reclaiming Degraded Lands

Reclaiming abandoned and currently-mined lands and landslides may have significant GHG mitigation promise in San Miguel County. Working with Federal and State agencies may offer significant funding opportunities to restore soils and plant cover on abandoned and current mined lands and landslides.

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## Appendix 1

Attributes of baseline and future greenhouse gas mitigation scenarios for San Miguel and Montrose Counties, Colorado.

county	baseline condition or future scenario?	scenario code	soil carbon change (Mg CO2e/ha/yr) relative to baseline	direct soil nitrous oxide (Mg CO2e/ha/yr) relative to baseline	indirect soil nitrous oxide (Mg CO2e/ha/yr) relative to baseline	tillage	Crop Rotation	Irriga tion	avg Nfert Ibs/acre over rotation	avg compost tons/acre over rotation
Montrose	baseline	grasshay_N T I fert	-1.05	0.55	0.03	no tillage	irrigated grass hay	Yes	70	0
Montrose	baseline	grazing_mo derate_irrig _fert	-1.48	0.47	0.06	no tillage	irrigated grass pasture	Yes	35	0
Montrose	baseline	grazing_mo derate_NI	0.07	0.19	0.02	no tillage	irrigated grass pasture	No	0	0
Montrose	baseline	irrigated_al f_5yr_ctil	0.00	0.35	0.01	conventional tillage	irrigated alfalfa hay	Yes	0	0
Montrose	baseline	irrigated_c orn_alf_ctil	-0.03	0.49	0.01	conventional tillage	irrigated corn- alfalfa(5yrs)	Yes	22	0
Montrose	baseline	irrigated_m ixed_hay_5 yr_ntil	-0.37	0.57	0.01	no tillage	irrigated grass- legume hay	Yes	7	0
Montrose	scenario	grasshay_N T_compost I	-7.15	0.91	0.05	no tillage	irrigated grass hay	Yes	0	9
Montrose	scenario	grazing_int ensive_irrig fert	-1.28	0.50	0.07	no tillage	irrigated grass pasture	Yes	35	0
Montrose	scenario	grazing_int ensive_NI	0.13	0.21	0.03	no tillage	irrigated grass pasture	No	0	0
Montrose	scenario	grazing_int ensive_rota tional_irrig fert	-1.06	0.46	0.06	no tillage	irrigated grass pasture	Yes	35	0
Montrose	scenario	grazing_int ensive_rota tional NI	0.08	0.19	0.02	no tillage	irrigated grass pasture	No	0	0
Montrose	scenario	grazing_mo derate_rota tional_irrig compost2	-4.60	0.66	0.07	no tillage	irrigated grass pasture	Yes	0	5
Montrose	scenario	grazing_mo derate_rota tional_irrig fert	-1.66	0.48	0.06	no tillage	irrigated grass pasture	Yes	35	0
Montrose	scenario	grazing_mo derate_rota tional NI	0.11	0.20	0.02	no tillage	irrigated grass pasture	No	0	0
Montrose	scenario	irrigated_al f 5vr ntil	-0.22	0.33	0.01	no tillage	irrigated alfalfa hav	Yes	0	0
Montrose	scenario	irrigated_al f 5yr rtil	-0.10	0.34	0.01	reduced tillage	irrigated alfalfa hay	Yes	0	0
Montrose	scenario	irrigated_c orn_alf_ctil _compost	-1.94	0.74	0.01	conventional tillage	irrigated corn- alfalfa(5yrs)	Yes	0	3.4
Montrose	scenario	irrigated_c orn_alf_ntil	-0.42	0.44	0.01	no tillage	irrigated corn- alfalfa(5yrs)	Yes	22	0
Montrose	scenario	irrigated_c orn_alf_ntil _compost	-2.60	0.63	0.01	no tillage	irrigated corn- alfalfa(5yrs)	Yes	0	3.4
Montrose	scenario	irrigated_c orn_alf_rtil	-0.21	0.46	0.01	reduced tillage	irrigated corn- alfalfa(5yrs)	Yes	22	0

Montrose	scenario	irrigated_c	-2.27	0.67	0.01	reduced	irrigated	Yes	0	3.4
		orn_alf_rtil				tillage	corn-			
Montrose	scenario	irrigated m	-0.16	0.59	0.01	conventional	irrigated	Yes	7	0
		ixed_hay_5				tillage	grass- legume hav			-
Montrose	scenario	irrigated_m	-0.85	0.64	0.02	conventional	irrigated	Yes	0	1
		ixed_hay_5				tillage	grass-			
		yr_ctil_com					legume hay			
Montrose	scenario	irrigated m	-1.19	0.60	0.01	no tillage	irrigated	Yes	0	1
		ixed_hay_5				Ũ	grass-			
		yr_ntil_com					legume hay			
Montrose	scenario	irrigated_m	-0.32	0.58	0.01	reduced	irrigated	Yes	7	0
		ixed_hay_5				tillage	grass-			
Mantura		yr_rtil	1.01	0.62	0.02	un dun e d	legume hay	Vee	0	1
wontrose	scenario	irrigated_m	-1.01	0.62	0.02	tillage	grass-	res	0	1
		yr_rtil_com				emage	legume hay			
		post								
San Miguel	baseline	dryland_F	0.21	0.24	0.04	conventional tillage	dryland fallow-	No	17.5	0
Wilguei		w_cui				tillage	wheat			
San	baseline	dryland_F	0.19	0.30	0.01	conventional	dryland	No	23	0
Miguel		WSun_ctil				tillage	Fallow-			
							Sunflower			
San	baseline	grasshay_N	-0.99	0.57	0.04	no tillage	irrigated	Yes	70	0
Miguel	haseline	T_l_fert	-0.50	0.65	0.14	no tillage	grass hay	Voc	35	0
Miguel	baseline	ensive_irrig	-0.50	0.05	0.14	no tilage	grass	165	35	0
-		_fert					pasture			
San	baseline	grazing_int	0.18	0.27	0.07	no tillage	irrigated	No	0	0
iviiguei		ensive_ini					pasture			
San	baseline	grazing_mo	-0.53	0.62	0.14	no tillage	irrigated	Yes	35	0
Miguel		derate_irrig					grass			
San	haseline	_fert_l	0.16	0.25	0.07	no tillage	pasture	No	0	0
Miguel	baseine	derate_NI	0.10	0.25	0.07	no tillage	grass	NO	Ū	Ū
_							pasture			
San Miguel	baseline	irrigated_al f_5vr_ctil	0.02	0.33	0.01	conventional tillage	irrigated alfalfa hav	Yes	0	0
San	baseline	mixed_hay	-0.30	0.52	0.02	no tillage	irrigated	Yes	7	0
Miguel		_5yr_NT_I					grass-			
San	haseline	shruh mod	0.12	0.19	0.03	no tillage	legume hay	No	0	0
Miguel	buseline	erate_grazi	0.12	0.15	0.05	no tiluge	Shi ublaria	110	Ŭ	Ŭ
		ng_NI								
San	scenario	dryland_F	-1.58	0.34	0.05	conventional tillage	dryland fallow-	No	0	2.5
winguei		post				tillage	wheat			
San	scenario	dryland_F	0.29	0.36	0.02	conventional	dryland	No	33	0
Miguel		W_FWHem				tillage	fallow-			
		p_ctil					dryland			
							fallow-			
							wheat-			
San	scenario	dryland F	-3.20	0.57	0.04	conventional	seednemp	No	0	5
Miguel	section	W_FWHem	5.20	5.57	5.04	tillage	fallow-		ľ	
		p_ctil_com					wheat to			
		post					dryland fallow-			
							wheat-			
				ļ	ļ		seedhemp			
San	scenario	dryland_F	-0.24	0.30	0.02	no tillage	dryland fallow-	No	33	0
Miguel		p_ntil					wheat to			
		. –					dryland			
							fallow-			
							seedhemp			

San Miguel	scenario	dryland_F W_FWHem	-4.55	0.40	0.03	no tillage	dryland fallow-	No	0	5
		p_ntil_com post					wheat to dryland fallow-			
							wheat-			
San Miguel	scenario	dryland_F W_FWHem p_rtil	0.08	0.34	0.02	reduced tillage	dryland fallow- wheat to dryland fallow- wheat-	No	33	0
San Miguel	scenario	dryland_F W_FWHem p_rtil_com post	-3.61	0.52	0.04	reduced tillage	seedhemp dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	0	5
San Miguel	scenario	dryland_F W_FWHem pseed_ctil	0.11	0.38	0.03	conventional tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	33	0
San Miguel	scenario	dryland_F W_FWHem pseed_ctil_ compost	-3.36	0.60	0.05	conventional tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	0	5
San Miguel	scenario	dryland_F W_FWHem pseed_ntil	-0.46	0.31	0.02	no tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	33	0
San Miguel	scenario	dryland_F W_FWHem pseed_ntil_ compost	-4.79	0.40	0.04	no tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	0	5
San Miguel	scenario	dryland_F W_FWHem pseed_rtil	-0.12	0.35	0.02	reduced tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	33	0
San Miguel	scenario	dryland_F W_FWHem pseed_rtil_ compost	-3.83	0.53	0.04	reduced tillage	dryland fallow- wheat to dryland fallow- wheat- seedhemp	No	0	5
San Miguel	scenario	dryland_F W_ntil	-0.19	0.19	0.03	no tillage	dryland fallow- wheat	No	17.5	0
San Miguel	scenario	dryland_F W_ntil_co mpost	-2.42	0.24	0.04	no tillage	dryland fallow- wheat	No	0	2.5
San Miguel	scenario	dryland_F W_rtil	0.07	0.22	0.03	reduced tillage	dryland fallow- wheat	No	17.5	0
San Miguel	scenario	dryland_F W_rtil_com post	-1.68	0.32	0.04	reduced tillage	dryland fallow- wheat	No	0	2.5

San	scenario	dryland_F	-2.12	0.43	0.05	conventional	dryland	No	0	3.3
Miguel		WSun_ctil_				tillage	fallow-			
		compost					wheat- Sunflower			
San	scenario	drvland F	-0.30	0.24	0.01	no tillage	drvland	No	23	0
Miguel		WSun_ntil				0	fallow-			
							wheat-			
<u> </u>			2.20	0.00	0.04		Sunflower		0	2.2
San Miguel	scenario	WSun ntil	-3.29	0.29	0.04	no tillage	fallow-	NO	0	3.3
		compost					wheat-			
							Sunflower			
San	scenario	dryland_F	0.04	0.28	0.01	reduced	dryland	No	23	0
Miguel		WSun_rtil				tillage	tallow-			
							Sunflower			
San	scenario	dryland_F	-2.49	0.38	0.05	reduced	dryland	No	0	3.3
Miguel		WSun_rtil_				tillage	fallow-			
		compost					wheat-			
San	scenario	grassbay N	-7.02	0.88	0.06	no tillage	irrigated	Voc	0	٩
Miguel	section	T I compo	7.02	0.00	0.00	no tillage	grass hav	103	0	5
0		st					5			
San	scenario	grazing_int	-0.41	0.57	0.13	no tillage	irrigated	Yes	35	0
Miguel		ensive_rota					grass			
		tional_irrig					pasture			
San	scenario	grazing int	0.12	0.24	0.07	no tillage	irrigated	No	0	0
Miguel		ensive_rota				0	grass			
		tional_NI					pasture			
San	scenario	grazing_mo	-0.50	0.63	0.14	no tillage	irrigated	Yes	35	0
iviiguei		tional irrig					grass			
		fert					pusture			
San	scenario	 grazing_mo	-2.43	0.63	0.20	no tillage	irrigated	Yes	0	1.5
Miguel		derate_rota					grass			
		tional_irrig					pasture			
		_ieit_comp								
San	scenario	grazing_mo	-2.43	0.63	0.20	no tillage	irrigated	Yes	0	5
Miguel		derate_rota					grass			
		tional_irrig					pasture			
		ost2								
San	scenario	grazing_mo	0.42	0.29	0.09	no tillage	irrigated	No	0	0
Miguel		derate_rota					grass			
San	cconario	tional_NI	0.19	0.22	0.01	no tillago	pasture	Voc	0	0
Miguel	scenario	f 5yr ntil	-0.18	0.52	0.01	no tilage	alfalfa hay	163	0	0
San	scenario	irrigated_al	-0.06	0.32	0.01	reduced	irrigated	Yes	0	0
Miguel		f_5yr_rtil				tillage	alfalfa hay			
San	scenario	irrigated_h	-7.26	1.56	0.30	conventional	irrigated	Yes	0	12
wiguei		emp_corn_				tillage	alfalfa hay			
		mpost					barley-			
							fiberhemp			
San	scenario	irrigated_h	-10.32	1.14	0.15	no tillage	irrigated	Yes	0	12
Miguel		emp_corn_					alfalfa hay			
		mpost					barley-			
		•					fiberhemp			
San	scenario	irrigated_h	-8.74	1.36	0.21	reduced	irrigated	Yes	0	12
Miguel		emp_corn_				tillage	alfalfa hay			
		mpost					barlev-			
							fiberhemp			
San	scenario	irrigated_h	-0.24	0.83	0.06	conventional	irrigated	Yes	95	0
Miguel		emp_corn_				tillage	alfalfa hay			
		barley_ctil					to corn- harley-			
							fiberhemp			
San	scenario	irrigated_h	-1.31	0.64	0.02	no tillage	irrigated	Yes	95	0
Miguel		emp_corn_					alfalfa hay			
		barley_ntil					to corn-		1	

							barley- fiberbemp			
San Miguel	scenario	irrigated_h emp_corn_ barley_rtil	-0.65	0.77	0.03	reduced tillage	irrigated alfalfa hay to corn- barley- fiberhemp	Yes	95	0
San Miguel	scenario	irrigated_h empseed_c orn_barley _ctil	-1.07	0.80	0.08	conventional tillage	irrigated alfalfa hay to corn- barley- fiberhemp	Yes	95	0
San Miguel	scenario	irrigated_h empseed_c orn_barley _ntil	-2.28	0.58	0.04	no tillage	irrigated alfalfa hay to corn- barley- fiberhemp	Yes	95	0
San Miguel	scenario	irrigated_h empseed_c orn_barley _rtil	-1.56	0.69	0.05	reduced tillage	irrigated alfalfa hay to corn- barley- fiberhemp	Yes	95	0
San Miguel	scenario	irrigated_m ixed_hay_5 yr_ctil_com post	-0.82	0.59	0.03	conventional tillage	irrigated grass- legume hay	Yes	0	1
San Miguel	scenario	irrigated_m ixed_hay_5 yr_ntil_com post	-1.12	0.55	0.03	no tillage	irrigated grass- legume hay	Yes	0	1
San Miguel	scenario	irrigated_m ixed_hay_5 yr_rtil_com post	-0.96	0.57	0.03	reduced tillage	irrigated grass- legume hay	Yes	0	1
San Miguel	scenario	irrigated_m ixed_hay_5 yr_rtil_I	-0.25	0.53	0.02	reduced tillage	irrigated grass- legume hay	Yes	7	0
San Miguel	scenario	mixed_hay _5yr_CT_I	-0.11	0.54	0.02	conventional tillage	irrigated grass- legume hay	Yes	7	0



AGENDA ITEM - 8.b.

TITLE:

Update with County Government Affairs/Natural Resources Director.

**Presented by:** Lynn Padgett, Government Affairs/Natural Resource Director **Time needed:** 15 mins

**PREPARED BY:** 

## **RECOMMENDED ACTION/MOTION:**

## **INTRODUCTION/BACKGROUND:**

## FISCAL IMPACT:

Contract Number:	Date Executed	End Date	Department(s)
YYYY-###			Board of County Commissioner Staff
Description:			