



Boulder County Purchasing
1325 Pearl Street
Boulder, CO 80302
purchasing@bouldercounty.org

REQUEST FOR PROPOSAL
COVER PAGE

RFP Number: **7134-20**

RFP Title: **2020 Boulder County Parks and Open Space Wetland Mapping, Vegetation Survey and Ecological Condition Assessment**

Mandatory Pre-Proposal Meeting: N/A

RFP Questions Due: **Monday, April 13, 2020 by 2:00 p.m.**

County Response Due: **Thursday, April 16, 2020**

Email Address: purchasing@bouldercounty.org

Documents included in this package:

- Proposal Instructions
- Terms and Conditions
- Specifications
- Insurance and W-9 Requirements
- Proposal Section
- Submittal Checklist
- Evaluation Criteria
- Sustainability Questionnaire
- Signature Page
- Attachments A-F

SUBMITTAL DUE DATE: **Thursday, April 23, 2020 by 2:00 p.m.**



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PROPOSAL INSTRUCTIONS

BACKGROUND:

Wetlands are a vital and sensitive resource within the arid west and in Boulder County. Wetlands function as significant habitat to a wide variety of plants and animals and provide an array of ecosystem services that benefit the people of Boulder County. They are recognized as an “important environmental resource” in the Boulder County Comprehensive Plan - Environmental Resource Element. Unfortunately, today wetlands face a broad range of threats. From invasive species degrading plant communities, to a decrease of water inputs associated with precision agriculture, to alterations in precipitation and hydroperiod due to climate change. Wetlands both globally and locally are rapidly changing.

While Boulder County Parks and Open Space (BCPOS) has collected data on wetlands in the past, the last update to wetland mapping on BCPOS land occurred in 2008 and less than 6% of wetlands within the county have ever received a standardized quality assessment. This data is critical for decisions made regarding the stewardship and management of wetlands.

Therefore, the Boulder County Parks and Open Space Department is seeking proposals to conduct a spatial mapping update and rapid ecological condition assessment for a targeted sample of wetlands on numerous BCPOS properties. The methodology will include a GPS delineation of the wetland feature, species inventory, percent cover estimate, and some, but not all, components of the ecological integrity assessment following the methods outlined in the Colorado National Heritage Program’s (CNHP) 2015 Colorado Wetland Ecological Integrity Assessment protocol (Field Manual Version 2.1) and associated Level 2.5 field data form located at: (<https://cnhp.colostate.edu/cwic/library/manuals/>). It is the selected Contractors responsibility to become familiar with the assessment protocol document.

BCPOS has collected data on wetlands in the past but has never completed a comprehensive inventory and much of the data is out of date. Previously collected BCPOS wetland data, as well as, the CNHP National Wetland Inventory will be used as a baseline for the field inventory. Due to the large number of features on BCPOS lands in these data sources, this effort will focus on emergent wetlands and exclude a majority of riverine or freshwater pond/lake features. For 2020 this project will be limited to northern Boulder County (see Attachment B). There is an estimated total of 141 wetland features and 299.9 acres that are currently mapped on forty six (46) BCPOS properties; and an additional sixteen (16) wetland features and 411.3 acres currently mapped on seven (7) conservation easement properties in the baseline dataset that will be field verified and inventoried as appropriate, as part of this effort.

Note that much of the current mapping was done by aerials and accuracy is highly variable; many of the features in the dataset have not been confirmed on the ground and may be omitted from the inventory during field verification, if they do not meet the criteria for a wetland. A large majority of the currently mapped wetlands occur on the plains in the eastern part of the county, although this may be a result of previous mapping priorities and difficulty distinguishing wetlands via aerials at higher elevations. If additional wetlands that are not in the baseline dataset are observed in the field during the inventory, they should be documented with a photograph and provided to Boulder County to determine if they should be added to the assessment. Attachment B shows the distribution of the current baseline wetland layer that will be verified and inventoried or documented and removed as part of this effort.

The data collected through this effort will be used to rank the overall ecological integrity of existing wetlands, help guide future management decisions and allow for repeated monitoring of BCPOS wetlands in the future.

CONTRACT LANGUAGE:

The successful proposer will be required to enter into a Contract for Services and meet all insurance requirements as required prior to any work beginning.

All proposers are instructed to thoroughly review all the stated insurance requirements for this Project, the insurance requirements stated are the minimum and standard for Boulder County Government, for this Project. All hired contractors are required to meet the insurance requirements, as stated, for contracted services as part of the Boulder County contracting process. Owner/Sole Proprietors/Officer are not exempt from the county's insurance requirements and coverage limits. Please refer to the Insurance Requirements in this RFP.

In the event the selected contractor is unable to commence work as agreed to, the Boulder County Commissioners may rescind the bid award and proceed to award the contract to another proposer based on RFP # 7134-20, re-bid the work, or proceed in any lawful manner the County deems necessary.

PRE-PROPOSAL MEETING:

A Pre-proposal meeting will NOT be held for this Project.

ATTACHMENTS:

The following documents are part of this RFP:

1. Attachment A: Sample CNHP Field Data Form with Required Metrics
2. Attachment B: Boulder County POS Wetland Maps
3. Attachment C: Table of Wetland Acreages and Properties
4. Attachment D: Boulder County Metadata Standards
5. Attachment E: Parks and Open Space Metadata Standards
6. Attachment F: Sample Contract

WRITTEN INQUIRIES:

All inquiries regarding **RFP # 7134-20** will be submitted via email to the Boulder County Purchasing Office at purchasing@bouldercounty.org on or before **2:00 p.m. Monday, April 13,**

2020. A response from the county to all inquiries will be posted and sent via email no later than **end of day Thursday, April 16, 2020.**

Please do not contact any other county department or personnel with questions or for information regarding this solicitation.

SUBMITTAL INSTRUCTIONS:

Submittals are due at the email box listed below, for time and date recording on or before **2:00 p.m. Mountain Time on Thursday, April 23, 2020.**

Your response can be submitted by email only. Please note that email responses to this solicitation are required but are limited to a maximum of 25MB capacity. NO ZIP FILES ALLOWED. Electronic submittals must be received in the email box listed below. Submittals sent to any other box will NOT be forwarded or accepted. This email box is only accessed on the due date of your questions or proposals. Please use the Delivery Receipt option to verify receipt of your email. It is the sole responsibility of the proposer to ensure their documents are received before the deadline specified above. Boulder County does not accept responsibility under any circumstance for delayed or failed email or mailed submittals.

Email purchasing@bouldercounty.org; identified as **RFP # 7134-20** in the subject line.

All RFPs must be received, and time and date recorded by authorized county staff by the above due date and time. Sole responsibility rests with the proposer to see that their RFP response is received on time at the stated location(s). Any proposals received after due date and time will be returned to the proposer.

The Board of County Commissioners reserves the right to reject any and all proposals, to waive any informalities or irregularities therein, and to accept the proposal that, in the opinion of the Board, is in the best interest of the Board and of the County of Boulder, State of Colorado.

Americans with Disabilities Act (ADA): If you need special services provided for under the Americans with Disabilities Act, contact the ADA Coordinator or the Human Resources office at (303) 441-3525 at least 48 hours before the scheduled event.



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TERMS AND CONDITIONS

1. Proposers are expected to examine the drawing, specifications, schedule of delivery, and all instructions. Failure to do so will be at the proposer's risk.
2. Each proposer will furnish the information required in the Request for Proposals.
3. The Contract/Purchase Order will be awarded to that responsible proposer whose submittal, conforming to the Request for Proposals, will be most advantageous to the County of Boulder, price and other factors considered.
4. The County of Boulder reserves the right to reject any or all proposals and to waive informalities and minor irregularities in proposals received, and to accept any portion of or all items proposed if deemed in the best interest of the County of Boulder to do so.
5. No submittal will be withdrawn for a period of thirty (30) days subsequent to the opening of proposals without the consent of the County Purchasing Agent or delegated representative.
6. A signed purchase order or contract furnished to the successful proposer results in a binding contract without further action by either party.
7. Late or unsigned proposals will not be accepted or considered. It is the responsibility of proposers to ensure that the proposal arrives at the Administrative Services Information Desk prior to the time indicated in the "Request for Proposals."
8. The proposed price will be exclusive of any Federal or State taxes from which the County of Boulder is exempt by law.
9. Any interpretation, correction or change of the RFP documents will be made by Addendum. Interpretations, corrections and changes of the RFP documents made in any other manner will not be binding, and proposer will not rely upon such interpretations, corrections and changes. The County's Representative will not be responsible for oral clarification.
10. Confidential/Proprietary Information: Proposals submitted in response to this "Request for Proposals" and any resulting contract are subject to the provisions of the Colorado

Public (Open) Records Act, 24-72-201 et.seq., C.R.S., as amended. Any restrictions on the use or inspection of material contained within the proposal and any resulting contract will be clearly stated in the proposal itself. Confidential/proprietary information must be readily identified, marked and separated/packaged from the rest of the proposal. **Co-mingling of confidential/proprietary and other information is NOT acceptable. Neither a proposal, in its entirety, nor proposal price information will be considered confidential/proprietary. Any information that will be included in any resulting contract cannot be considered confidential.**

The Boulder County Attorney's Office retains sole authority for determining whether the Colorado Open Records Act requires or permits Boulder County to disclose proposal or bid documents, or any information contained therein, pursuant to an open records request.

11. Boulder County promotes the purchase/leasing of energy efficient, materials efficient and reduced toxic level products where availability, quality and budget constraints allow. Proposers are expected whenever possible to provide products that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency with power management features enabled. Proposers are encouraged to offer products and equipment with post-consumer recycled-content materials. Products should be packaged and delivered with a minimum amount of recycled packaging that adequately protects the product but is not excessive.
12. Pursuant to Colorado law (House Bill 1292), in any bidding process for public works in which a bid is received from a non-resident bidder who is from a state that provides a percentage bidding preference, a comparable percentage disadvantage will be applied to the bid of that bidder. Bidders may obtain additional information from the Department of Personnel's website: <http://www.colorado.gov/dpa/>.



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SPECIFICATIONS

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General Scope of Work:

Boulder County Parks and Open Space (BCPOS) manage approximately 65,000 acres of land across Boulder County. Past wetland mapping efforts, including the National Wetland Inventory (NWI) from the 1970's-1980's, BCPOS inventory efforts (1999, 2003, 2012), and CNHP wetland mapping (2009), have identified over 500 wetlands within those properties owned by Boulder County.

Due to the large scope of a comprehensive inventory and assessment, this project will focus on the northern portion of the County during 2020 (see Attachment B). It will further focus on wetlands previously identified as freshwater emergent, wet meadow, and some identified ditch and pond (lacustrine) wetlands, according to the Cowardin classification. Riverine wetlands are not part of the scope of this initial phase of the project.

Within the project area outlined in Attachment B, BCPOS has identified 157 individual wetlands to be visited as part of this assessment. The wetlands occur on approximately forty-six (46) individual fee owned properties. Sixteen (16) wetlands occur on seven (7) private properties with Conservation Easements held by Boulder County. Only wetlands larger than .10 acres were included in this estimate and will be subject to inventory and assessment. The largest wetland presently identified is approximately 332 acres, and the next largest at thirty-five (35) acres. The vast majority of them are much smaller. Please refer to Attachment C for a breakdown of acreages. Wetlands two (2) acres or less in size will be assessed as a single Assessment Area (AA). Larger wetlands will utilize a standard AA (refer to manual), and in the case of the largest wetland, may require three (3) to four (4) AA's.

The field work will include a spatial component to map or update the perimeter of each wetland with a GPS unit. The assessment protocol will follow the Colorado Natural Heritage Program's 2015 Colorado Wetland Ecological Integrity Assessment (EIA), Level 2.5 Site Data, utilizing the associated Field Manual, Version 2.1. Not all metrics will be compiled or assessed for this project. Notably, Soil Profile Descriptions and associated soil pits, and Stressors will not be part of the scope of work. Refer to the attached worksheet with redlines in Attachment A for all required data to be collected or omitted.

TASKS:

Task 1 – Project Planning and Analysis

- a) Project Setup and Coordination:
 - i) Before any work begins, the selected Contractor will meet with the project team to develop a detailed schedule to effectively complete the mapping and data collection.

The selected Contractor will coordinate with the BCPOS Project Coordinators throughout the process. Progress updates will be completed by email detailing field data collection, mapping and data entry progress. The selected Contractor will coordinate with BCPOS GIS staff to determine data transferring procedures. The selected Contractor will comply with all Open Space regulations as there may be wildlife closures which will limit access to the properties during the project period.

- ii) Selected Contractor, with help from BCPOS, will be responsible for providing a weekly field work agenda, outlining properties to be visited one (1) week in advance so as to allow for agricultural tenant notification when necessary and other access issues.

b) Meetings:

The Contractor will be responsible for planning, coordinating and attending the following meeting schedule. Number of required meetings, at a minimum, in parentheses.

- i) Project Kick-off, Proposed Schedule (1).
- ii) GIS Coordination with BCPOS GIS staff (2).
- iii) Coordinated site visits as needed (2-3).
- iv) End of Year Debrief (1).

The selected Contractor, at the request of BCPOS, will be responsible for providing an agenda forty-eight (48) hours prior to any meeting, and meeting minutes within forty-eight (48) hours upon completion of any meeting.

Task 2 – Data Collection and Field Work

a) Field Work Preparation:

- i) Review the existing Boulder County wetland layer and develop a strategy for completing the necessary field work within the different geographic areas.
- ii) Prepare data for collection in the field, using provided BCPOS Wetland Mapping Geodatabase, CNHP available software, or alternative BCPOS approved data collection methodology.

b) Complete Field Assessment of Each Assessment Area (AA) / Wetland:

- i) Delineate each AA using GPS Unit with meter or better accuracy.
- ii) Collect and label photos per required specifications.
- iii) Complete pages 1-3 of the EIA Field Form – Level 2.5 Site Data, to document the location of the AA, classification, and other general information.
- iv) Conduct species inventory and assign percent cover classes for each distinct zone within the AA (EIA Level 2.5 Site Data, Pages 4-5).
 - (1) Include C values (Coefficients of Conservatism) for each species to be used in alternate bid item for calculation of Floristic Quality Assessment (FQA) indices for Mean C values and Floristic Quality Index (FQI).
- v) Complete the Ecological Integrity Assessment Metrics identified on the EIA Field Form EIA Metrics pages 1-7, as provided in Attachment A.
 - (1) Note – Not all categories / rank factors will be collected.
 - (2) Landscape Metrics (L1 and L2) can be completed at the Level 1 assessment via remote sensing.
- vi) Complete EIA Scorecard.

Task 3 – Data Synthesis and Reporting

- a) Process collected field data as needed (spatial, numerical, categorical).
- b) Compile results and draft summary report.
 - i) Summary report shall include, but is not limited to:

- (1) Introduction and Objectives.
- (2) Study Area and Methodology.
- (3) Data analysis and assessment results including, but not limited to: comprehensive table of wetland scores, wetland acres by various metrics, wetlands of significant value per function or vegetative diversity, most commonly noted plant species and noxious weeds, any rare and tracked species occurrences and noted changes to previously mapped acreages.
- (4) Discussion and any noted recommendations for future management.
- (5) References and appendices.

Task 4 – Mapping of additional wetlands not identified in initial provided maps

- a) Any additional wetlands found in the field that are not identified on provided maps will be noted as to property, location and approximate acreage, then discussed with BCPOS staff prior to any assessment being completed.
- b) If approved by BCPOS for inclusion in this assessment, any assessment will follow the same EIA protocol provided herein.

Task 5 – Completion of Floristic Quality Assessment Calculations

- a) For each assessed wetland with a unique identification code, a Floristic Quality Assessment (FQA) calculation will be completed using the species list compiled from the BCPOS wetland assessment and the CNHP FQA calculator available online at: <https://cnhp.colostate.edu/cwic/tools/calculator>
- b) FQA indices for individual wetlands will be ranked and provided in final report.

Contractor Responsibilities/Deliverables:

- a) The selected Contractor will be responsible for convening a qualified team.
- b) The selected Contractor will be responsible for providing meeting agendas, meeting minutes and for coordinating ongoing communication with County staff and others as needed.
- c) Selected Contractor shall review all literature and data provided by BCPOS including, but not limited to: attachments, aerial imagery, topographic maps, existing wetland GIS data, ditch and stream data and other maps that are necessary for the fieldwork.
- d) Follow the protocol and methodology established by CNHP and BCPOS.
- e) Individual wetlands will be identified using an alphabetical and numerical code consisting of the first four (4) letters of the BCPOS property (ie. Reynolds Ranch = REYN) followed by a sequential numbering starting at one (1) for all wetlands assessed within that property. Past wetland mapping has already created some wetlands with unique identifying codes. Where those exist, the code shall remain consistent. BCPOS will provide that information to the selected Contractor.
- f) Photos for each wetland. Depending on size and topography, each individual wetland should have one to five (1-5) photos. Photos should include a white board in the picture, with wetland ID, per protocol above, date and direction of photo. Final submittal of digital photos should be similarly labeled.
- g) Using the Level 2.5 Assessment requires identifying as many plant species as possible within the AA, within one (1) to two (2) hours, along with a cover class. Please note dominant species, as well as, those species with low cover and abundance, but significant due to their rarity or high C values.
- h) Documentation of rare plants, defined as those tracked by CNHP, should be documented

with a GPS coordinate and should be included in a table with associated wetland location in the final report.

- i) Mapping of state listed noxious weeds can be noted in the wetland assessment and diagram, but will not require a GPS location, unless it is a Colorado State List A species or an individual occurrence in a larger wetland.
- j) Wetlands less than two (2) acres will be a single AA. Wetlands larger than this will use a standard assessment area consisting of a 40m radius circle, or another appropriate AA as agreed upon by the selected Contractor and BCPOS. The largest identified wetland of 322 acres may require three (3) to four (4) individual AA's to more accurately capture the variation within wetland. Within each AA, there may be multiple zones of different vegetation communities or open water. (Refer to pages 1 and 2 of EIA field form).
- k) Submit all collected field data, polygon and species data in the provided ESRI geodatabase format, or alternative agreed upon format, by or before December 2, 2020.
- l) Provide draft and final reports by required deliverable dates as noted below.

GIS Specifications for Wetland Mapping Deliverables

- a) Wetland mapping data will be submitted in the ESRI geodatabase structure provided by BCPOS.
 - i) If the selected Contractor cannot provide the data in the ESRI geodatabase format provided by BCPOS, alternate formats may be considered, such as ESRI shapefiles with associated Excel spreadsheets or CSV files. Alternate data formats will only be accepted with pre-approval from the County. No KML files will be accepted.
 - ii) Alternative data formats must be formatted with the correct unique identification values, species identification codes and data structure to ensure BCPOS the ability to import seamlessly into the existing BCPOS data structure.
- b) Photos are preferred as attachments in the geodatabase, as specified in the provided BCPOS Wetland Mapping Geodatabase data structure (see Attachments D and E). Alternative formats will be accepted with pre-approval from the County.
- c) Assessment area drawings will be accepted as attachments in GIS, paper drawings or as photos (external to the GIS geodatabase), or other format with pre-approval from the County.
- d) A list of any new wetlands found in the field which are not currently in the Boulder County database will be GPS'd for inclusion in the wetland data layer and will also be provided in an Excel table with property name, wetland ID, protocol consistent with above and acreage in the final report.
- e) Any other spatial data collected by GPS, such as weed infestations or rare species occurrences, must be delivered in ESRI geodatabase format. Alternative formats may be accepted with pre-approval from the County.
- f) All GIS data must be ArcGIS 10.x compatible.
- g) All GIS data must have complete metadata, following Boulder County GIS Metadata Standards located at:
<https://assets.bouldercounty.org/wp-content/uploads/2018/03/metadata-standards-contractors.pdf>
- h) All spatial or georeferenced data will be provided to the county in the following coordinate system:

Name: NAD 1983 HARN State Plane Colorado North FIPS 0501 Feet
Unit: Foot US
Projection: Lambert Conformal Conic
Horizontal Datum: North American Datum 1983 HARN
Vertical Datum: North American Vertical Datum 1988
Spheroid: GRS 1980

Boulder County Parks and Open Space Responsibilities:

- a) Boulder County owns all properties where field work will occur and is therefore the project owner.
- b) BCPOS manages all properties on behalf of Boulder County and shall serve as the county's representative.
- c) BCPOS will work with selected Contractor to provide directions for access to individual properties that are within the scope of this project.
- d) BCPOS will provide information about any permanent or seasonal property closures to the selected Contractor to facilitate scheduling of field work.
- e) BCPOS will provide coordination and communication to any agricultural tenants that have active leases on properties within the scope of this project.
- f) BCPOS will provide current wetland locations through an ESRI geodatabase and in an ESRI ArcMap Map Book format or pdf with property boundaries, gates and access routes identified.
- g) BCPOS will provide an ESRI geodatabase for the CNHP Ecological Integrity Assessment for Colorado Wetlands data structure.

PROJECT COMPLETION SCHEDULE:

Project Deliverable Dates:

- 1. All draft data and draft reports must be submitted to the County by **November 7, 2020**.
- 2. After a preliminary review by BCPOS staff, adjustments to any inconsistent or inaccurate data must be corrected and resubmitted as final products by **December 2, 2020**.

CONFLICT OF INTEREST:

Any party that has developed, designed or drafted specifications, requirements, statements of work and/or has participated in planning activities for this Project may be excluded from consideration for the award of this Project.

CHANGE ORDERS:

Any unplanned, change orders, modifications or additional services to this Project, shall be submitted by the selected Contractor, in a separate, written document, including a fee schedule and completion schedule and presented to the County for review. Approval from the County, in writing, must accompany all change order requests.

OVERNIGHT CAMPING:

Boulder County prohibits any overnight camping; all operational staff, including designated security staff, are not authorized to be present at Project site from sunset to sunrise, the open

space property will remain closed during these hours to the contractor and its subcontractors and/or designated representatives and/or agents, unless specifically authorized by a BCPOS representative.

HOURS OF OPERATION:

Contractor work hours shall be designated by the selected Contractor and County in order to complete the Project. Work on Saturdays and Sundays, nights, and designated Federal Holidays shall be allowed, with written approval by the County prior to work commencing. All Boulder County Parks and Open Space Rules and Regulations will apply while the selected Contractor is on Open Space Property.



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INSURANCE AND W-9 REQUIREMENTS

INSURANCE REQUIREMENTS:

Note that the insurance amounts listed below are the minimum required for this project. **Proof of current insurance must be provided with your proposal in the form of a sample certificate or your proposal will be deemed non-responsive.** If you require a waiver of insurance requirements (e.g. Workers' Compensation and sole proprietorships) you may request one in your response with an explanation.

***This type of coverage will be required to remain in place and be maintained by the selected contractor for the 3-year period as noted after completion of the Project.**

***General Liability** \$1,000,000 Each Occurrence
 \$2,000,000 General Aggregate
 \$2,000,000 Products Completed Operations Aggregate
 3 years Products/Completed Operations

Automobile Liability \$1,000,000 Each Accident
 Including Hired & Non-Owned Auto

Worker's Compensation and Employer's Liability

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of \$100,000 Each Accident/\$500,000 Disease-Policy Limit/\$100,000 Disease-Each Employee.

In regards to General Liability, Umbrella/Excess Liability, and Pollution Liability:

If any or all of these coverages are required above, additional insured status will be required at the time a contract is executed.

THE ADDITIONAL INSURED WORDING SHOULD BE AS FOLLOWS: County of Boulder, State of Colorado, a body corporate and politic, is named as Additional insured.

W-9 REQUIREMENT:

Please provide a copy of your business's W-9 with your proposal.



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SUBMITTAL SECTION

The proposer’s attention is especially called to the items listed below, which must be submitted in full as part of the PROPOSAL. Failure to submit any of the documents listed below as a part of your PROPOSAL, or failure to acknowledge any addendum in writing with your PROPOSAL, or submitting a proposal on any condition, limitation or provision not officially invited in this Request for Proposal (RFP) may be cause for rejection of the PROPOSAL.

THIS CHECKLIST MUST BE SUBMITTED AS PART OF YOUR PROPOSAL PACKAGE: Proposer will check each box indicating compliance:

INCLUDED	ITEM
	Name of your company / organization
	Type of organization (Corporation, Partnership, etc.)
	Address
	Name and Address of the Partners and Subcontractors if applicable
	Contact Person(s)
	Telephone, fax, and email
	A detailed project schedule with an all-inclusive total cost
	Information on the relevant experience of key personnel
	Proposal Elements 1a through 1h as detailed below.
	Submit a minimum of three (3) references for similar projects your company has completed within the last three (3) years and contact information.
	State your compliance with the Terms and Conditions in the Sample Contract contained in this RFP. Specifically list any deviations and provide justification for each deviation.
	Sustainability Questionnaire
	Insurance Certificate
	W-9
	Signature Page
	Addendum Acknowledgement(s) (If Applicable)

All proposals must comply with the following conditions:

- 1) A representative for the selected Contractor, who has contractual authority, must sign the proposal. Only one (1) proposal will be accepted from any one (1) company serving as a lead company. Subconsultants or Subcontractors may be included in the proposal of more than one (1) company.

- 2) All proposals must be complete, comprehensive, and professional. All costs incurred in the preparation and presentation of the proposal shall be entirely borne by the prospective Contractor's and any Subconsultants or Subcontractors shall not be reimbursable by the County.
- 3) A selection committee will review the proposals received and select the Contractor it believes is the most qualified to furnish the desired professional services based on the criteria listed below.

Proposal Elements and Format:

The response to this RFP, for items a-h below, is limited to a maximum of twenty-five (25) single sided pages, excluding front and back covers and the Cover Letter, using no smaller than 11-point font and no less than 0.5" margins. Each response should be complete, yet concise and contain only the elements shown below.

- a) Cover Letter - A one (1) page cover letter shall be provided, that expresses the Contractor's interest to be considered and identifies the Contractor's primary contact person. Please provide the name, telephone number, fax number and email address of the primary contact person. The cover letter shall be signed by a person who has contractual authority with the Contractor's company, such as a principal, partner, senior manager or officer of the Contractor's company.
- b) Project Team – Describe the company's team for the Project, including how many staff will be working on the Project, both field and office and their percentage of time to be dedicated to the Project. Please also list any proposed Subconsultants or Subcontractors. For the key project team members, which at a minimum should include the Contractor's Project Manager and Lead Field Staff please include:
 - i) A brief description of the individual's background and experience or resume.
 - ii) Each individual's years of relevant experience.
 - iii) The role each individual will take on the Project.
- c) Relevant Project Experience - Please provide relevant project experience per the guidelines given in the general categories of wetland delineation/assessment/ inventory, rare plant surveys, vegetation monitoring and riparian/stream functional assessments. Please do not provide more than three (3) relevant projects for each category. Projects can be listed for multiple categories if significant work encompassed that category.
- d) References - List of clients for which the Contractor has performed similar work. Include contact information for each client, with a maximum of ten (10) clients listed.
- e) Understanding of RFP and Project Approach - Describe your approach for the requested services and your proposed technical process for a timely and comprehensive completion of this Project. Details should include, but are not limited to:
 - i) What GPS equipment you will use to collect the field data. Please include the GPS unit model, accuracy specification, and any real-time or post-processing correction protocols you will apply.

- ii) What software, including version, you will use to collect, process, and manage the data.
- iii) The format (and version, if applicable) you propose to deliver the spatial and tabular (if different from the spatial) data in. If your data will be delivered in provided BCPOS Wetland Mapping Geodatabase, please be specific in your data schema and how data will link together and be imported by BCPOS.
- iv) How you will deliver photos (including format) and link these photos to the associated spatial wetland data? List any photo software you will be using to collect, process, or manage photos.
- v) How will you deliver Assessment area drawings (including format) and how will you link these photos to the associated spatial wetland data? List any software that you will be using to collect, process or manage these drawings.
- vi) How you would assess an entire wetland as one (1) Assessment Area (AA), while also delineating zones of vegetation that can provide a baseline to track changes over time?
 - (a) If your expertise would lead you to conduct the assessment differently than proposed here, please provide details of your methodology and justification for how it would meet our needs and provide an improved product.
 - (b) If you believe this Project will require more than one (1) year of effort, please include that justification and an accurate accounting of how much of this Project can be completed within one (1) field season.
- f) Proposed Work Schedule - Provide a proposed work schedule for the 2020 field season and calendar year with milestone deliverables and dates, with a completion date no later than December 2, 2020. If necessary, please include an anticipated schedule beyond 2020, if your proposal includes multi-year phasing.
- g) Fee Proposal - Provide a rate sheet for all work by labor category.
- h) Workload Capacity - Please list your proposed project team's current workload capacity and commitments in addition to its anticipated capacity for this Project. Please state your team's commitment to accomplish this Project in what's acknowledged to be a tight time frame.



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Boulder, CO 80302
purchasing@bouldercounty.org

EVALUATION CRITERIA

The proposals will be reviewed by a selection committee. The committee may request additional information from vendors or request interviews with one or more vendors. Final evaluation and selection may be based on, but not limited to, any or all of the following:

- Project Team
- Project Cost
- Relevant Experience, Proposed Methodology and Comprehension of the Required Tasks
- Demonstrated Capacity

A scoring matrix with the order and priority of criteria to be used by the county in its evaluation and selection process is shown below:

Description	Points
Project Team	20
Project Cost	30
Relevant Experience, Proposed Methodology and Comprehension of the Required Tasks	35
Demonstrated Capacity	15
Total Possible	100

Selection Criteria:

In accordance with Boulder County procurement rules, the County will select the most responsive and responsible Contractor. Upon receipt of the proposals, the review team will review and score each proposal. The scores, based on the criteria above, will be compiled and the selection team will identify and interview Contractor's with the highest scores. The top-ranking Contractor, after both the proposal scoring and interview will be selected to enter into a professional services contract with Boulder County, subject to the approval of the Boulder County Board of County Commissioners. The proposals will be evaluated using the following criteria and scoring system with a maximum of 100 points available:

- i) Project Team: Project manager, key team members, the contractor's team qualifications, defined responsibilities and key team member's experience working together = 20 points
- j) Project Cost: Overall all-inclusive cost = 30 points
- k) Relevant experience, proposed methodology and comprehension of required tasks: Overall experience of project team in performing work of a similar nature to that described herein, a familiarity with Colorado wetland flora and a demonstrated understanding of the tasks required = 35 points

- l) Demonstrated Capacity: Proposal includes a realistic project schedule that demonstrates the project can be completed by or before December 2, 2020 and that the project team has the time and capacity in their work schedules to do so = 15 points



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SUSTAINABILITY QUESTIONNAIRE

Company Name: _____ Date: _____

This questionnaire is applicable to firms that provide services as well as those that provide goods. Please answer the questions to the best of your ability.

1. What sustainability certifications does your business have? Please check the items that apply:

- B-Corp
- Green Business Bureau
- Fair Trade USA
- Green C Certification
- None
- Other - describe any other certifications your company has related to sustainability.

2. Does your company have a sustainability vision/commitment/values statement or policy? Please check the items that apply:

- Our sustainability statement/policy describes our company's sustainability initiatives.
- We have formed an oversight committee to ensure the success of our sustainability policy.
- Our sustainability statement/policy describes how our company explores opportunities to work with communities, governments and non-governmental and professional organizations to help articulate, teach and advance the principles of sustainability.
- We are currently in the process of developing a sustainability statement/policy consistent with a commitment to promote environmental, economic, and social sustainability.
- None
- Other - Provide (or supply a link) your company's sustainability statement/policy.

3. What policies are in place to monitor and manage your supply chain regarding sustainability issues? Please select all that apply:

- We apply sustainability criteria when making purchasing decisions.
- We partner with suppliers who share in our sustainability commitment and/or work with them to reduce the impact to the environment of our resource needs as well as improve worker conditions.
- We purchase "green" (i.e. recyclable, reusable, non-toxic, compostable, fair trade and made from 100% post-consumer recycled materials) supplies, products, and materials.
- We specify locally manufactured products in procuring goods.
- We specify products that use the Electronic Products Environmental Assessment Tool (EPEAT) standards in procuring goods.
- None.
- Other – describe other ways your company monitors and manages your supply chain concerning environmental issues.

4. Does your company promote sustainable transportation in its operations? Please select all that apply:

- We own, rent, or lease electric fleet vehicles.
- We own, rent, or lease hybrid or natural gas fueled fleet vehicles.
- We encourage carpooling, public transportation, and using other alternative modes of transportation.
- We subsidize public transportation for employees.
- We have an established Green Transportation
- We are developing a Green Transportation Plan
- We offer flexible hours, telecommuting, or a compressed work week.
- We utilize teleconference, video conference, WebEx or GoTo Meetings (or other similar conferencing services).
- None
- Other – describe other ways your company promotes sustainable transportation. If applicable, use this space to describe your company's Green Transportation Plan (whether existing or in development).

5. What does your company do to minimize the environmental impacts associated with shipping? Please check the items that apply:

- We have established company policies and procedures that minimize the need for shipping in the first place

- We combine deliveries with customer visits.
- We consolidate deliveries.
- We use bike couriers for local delivery.
- We utilize electronic communications and electronic transfer of documents, such as e-mail, fax and Portable Document Format (PDF).
- We specify products that can be purchased locally within a 500-mile radius of the delivery location in procuring goods.
- We are currently evaluating what the company can do to minimize the environmental impacts associated with shipping (must describe below; no additional points awarded for providing this description).
- Our packaging/shipping materials are reusable.
- Our packaging/shipping materials are made from 100% post-consumer recycled materials.
- N/A
- Other – describe what your company does to minimize the environmental costs associated with shipping. If applicable, use this space to provide required description(s).

6. Has your company ever been cited for non-compliance of any law, regulation, ordinance, code, rule, standard, or policy regarding an environmental or safety issue? Please check the item that applies:

- No, my company HAS NOT been cited for non-compliance regarding an environmental or safety issue.
- Yes, my company HAS been cited for non-compliance of an environmental or safety issue.
- N/A State the reason, date and outcome of the citation:

7. What programs do you have, either in place or currently being planned, to promote resource efficiency? Examples include energy or waste audit programs. Please check the items that apply:

- We have an established zero waste program.
- We utilize a facilities energy management system.
- We have adopted a climate action plan.
- We have a water conservation program.
- We have formed a sustainability committee to identify sustainable solutions for our company.
- We are a member of various sustainability organizations.
- We are recognized by peers and environmental organizations for providing leadership in Sustainability.

- None
- Other - what other programs do you have in place or planned for promoting resource. Efficiency?

8. If your business’s proposal involves the provision of a product, does the manufacturer of the product, whether your business or an outside entity, have a sustainability policy statement? Please check the item that applies:

- No, the manufacturer of the product that I am proposing DOES NOT have a sustainability policy statement.
- Yes, the manufacturer of the product that I am proposing HAS a sustainability policy statement.
- Not applicable.

Provide Sustainability Policy Statement:

9. If your business’s proposal involves the provision of a product, has the manufacturer of the product, whether your business or an outside entity, ever been cited for non-compliance of any law, regulation, ordinance, code, rule, standard, or policy regarding an environmental or safety issue? Please check the item that applies:

- No, the manufacturer of the product that I am proposing HAS NOT been cited for noncompliance regarding an environmental or safety issue.
- Yes, the manufacturer of the product that I am proposing HAS been cited for noncompliance regarding an environmental or safety issue.
- Not applicable.

Provide reason, date and outcome of the citation:

10. If your business’s bid/proposal involves the provision of a product, has an environmental life-cycle analysis of the product that you are proposing been conducted by a certified testing organization, such as Green Seal, Energy Star, and Cradle to Cradle? Please check the item that applies.

- No, an environmental life-cycle analysis of the product that I am bidding/proposing HAS NOT been conducted by a certified testing organization, such as Green Seal.

- Yes, an environmental life-cycle analysis of the product that I am bidding/proposing HAS been conducted by a certified testing organization, such as Green Seal.
- Not applicable.

Provide certification:



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PROPOSAL SECTION

Task #	Item Description	Unit	Cost
1	Project Planning and Coordination <ul style="list-style-type: none"> • Pre-Project Assessment and Planning • In person meetings (6-7) • Ongoing Project communication 	LS	
2	Data Collection and Field Work (157 wetlands – 53 Properties) <ul style="list-style-type: none"> • Spatial data collection • Ecological Integrity Assessments • Vegetation surveys 	LS	
3	Data Synthesis and Reporting <ul style="list-style-type: none"> • Field Data Rectification • GIS Data Entry • Plant Species Data Entry • Floristic Quality Calculations • Deliverables including GIS data, draft and final report 	LS	
4	Additional wetlands not identified in RFP	Per Individual Assessment Area	
5	Floristic Quality Assessment Calculations	LS	
	Total Project Cost		

 Company Name

 Name of person and title submitting BID (PLEASE PRINT)

 Signature of Bidder

 Date



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Boulder, CO 80302
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SIGNATURE PAGE

Contact Information	Response
Company Name including DBA	
List Type of Organization (Corporation, Partnership, etc.)	
Name, Title and Email Address of Person Authorized to Contract with Boulder County	
Company Address	
Company Phone Number	
Company Website	

By signing below, I certify that:

I am authorized to bid on my company's behalf.

I am not currently an employee of Boulder County.

None of my employees or agents is currently an employee of Boulder County.

I am not related to any Boulder County employee or Elected Official.

(Sole Proprietorships Only) I am not a Public Employees' Retirement Association (PERA) retiree.

**Signature of Person Authorized to Bid on
 Company's Behalf**

Date

Note: If you cannot certify the above statements, please explain in a statement of explanation.

2015 COLORADO WETLAND ECOLOGICAL INTEGRITY ASSESSMENT (EIA) – SITE INFORMATION

LOCATION AND GENERAL INFORMATION	
Site ID: _____	Site Name <u>Use POS property name</u> _____
LEVEL 2.5 ASSESSMENT	
Date: _____	Surveyors: _____
General Location: _____ County: _____	
General Ownership: _____ Specific Ownership: _____	
Directions to Point: _____	
Access Comments (note permit requirements or difficulties accessing the site): _____	
GPS COORDINATES OF TARGET POINT AND ASSESSMENT AREA	
<u>Dimensions of AA:</u> <input type="checkbox"/> 40-m radius circle <input type="checkbox"/> Freeform polygon, limited to 0.5 ha <input type="checkbox"/> Wetland boundary, other (note in comments)	Elevation (m): _____ Slope (deg): _____ Aspect (deg): _____
AA-Center WP #: _____	UTM E: _____ UTM N: _____ Error (+/-): _____
(Circle AAs Only)	
AA-1 WP #: _____	UTM E: _____ UTM N: _____ Error (+/-): _____
AA-2 WP #: _____	UTM E: _____ UTM N: _____ Error (+/-): _____
AA-3 WP #: _____	UTM E: _____ UTM N: _____ Error (+/-): _____
AA-4 WP #: _____	UTM E: _____ UTM N: _____ Error (+/-): _____
AA-Track Track Name: _____	Area: _____
AA Placement and Dimensions Comments: _____	
PHOTOS OF ASSESSMENT AREA (Taken at four points on edge of AA looking in. Record WPs of each photo in table above.)	
AA-1 Photo #: _____ Aspect: _____ AA-2 Photo #: _____ Aspect: _____ AA-3 Photo #: _____ Aspect: _____ AA-4 Photo #: _____ Aspect: _____	Photo Range: _____ Comments: _____

ENVIRONMENTAL DESCRIPTION AND CLASSIFICATION OF ASSESSMENT AREA

<p><u>Wetland / riparian / upland inclusions:</u> (should = 100%)</p> <p>_____ % AA with true wetland and/or water</p> <p>_____ % AA with non-wetland riparian area</p> <p>_____ % AA with upland inclusions</p>	<p><u>Wetland origin:</u> (if known)</p> <p>_____ Natural feature with minimal alteration</p> <p>_____ Natural feature, but altered or augmented by modification</p> <p>_____ Non-natural feature created by passive or active management</p> <p>_____ Unknown</p>
--	--

Ecological System: (see manual for key and pick the *best match*) Fidelity: High Med Low

<p><u>Cowardin Classification</u> Fidelity: High Med Low (see manual and pick <i>one each</i> of System, Class, Water Regime, and optional Modifier for dominant type)</p>	<p><u>HGM Class:</u> (pick <i>only one</i>) Fidelity: High Med Low</p> <p>_____ Riverine* _____ Lacustrine Fringe</p> <p>_____ Depressional _____ Slope</p> <p>_____ Flats _____ Novel (Irrigation-Fed) Riverine / Slope</p> <p><i>*Specific classification and metrics apply to the Riverine HGM Class</i></p>
--	--

RIVERINE SPECIFIC CLASSIFICATION OF THE ASSESSMENT AREA

<p><u>Confined vs. Unconfined Valley Setting</u></p> <p>_____ Confined Valley Setting (valley width < 2x bankfull width)</p> <p>_____ Unconfined Valley Setting (valley width ≥ 2x bankfull width)</p> <p><u>Stream Flow Duration</u></p> <p>_____ Perennial</p> <p>_____ Intermittent</p> <p>_____ Ephemeral</p>	<p><u>Proximity to Channel</u></p> <p>_____ AA includes the channel and both banks</p> <p>_____ AA is adjacent to or near the channel (< 50 m) and evaluation includes one or both banks</p> <p>_____ AA is > 50 m from the channel and banks were not evaluated</p> <p><u>Stream Depth at Time of Survey (if evaluated)</u></p> <p>_____ Wadeable</p> <p>_____ Non-wadeable</p>
---	---

MAJOR ZONES WITHIN THE ASSESSMENT AREA (See manual for rules and definitions. Mark each zone on the site sketch.)

Zone 1	Description _____	Dom spp: _____	% of AA: _____
Zone 2	Description _____	Dom spp: _____	% of AA: _____
Zone 3	Description _____	Dom spp: _____	% of AA: _____
Zone 4	Description _____	Dom spp: _____	% of AA: _____
Zone 5	Description _____	Dom spp: _____	% of AA: _____

ENVIRONMENTAL AND CLASSIFICATION COMMENTS

Classification Issues (important for sites with medium or low fidelity to one or more classification systems):

AA REPRESENTATIVENESS

Is AA the entire wetland/riparian area? Yes No

If no, is AA representative of larger wetland/riparian area? Yes No NA (if AA is the entire wetland)

Comments:

ASSESSMENT AREA DRAWING

Add north arrow and approx. scale bar. Document **habitat features** and **biotic and abiotic zones** (particularly open water), inflows and outflows, and indicate direction of drainage. Include location of **AA points**, **soil pits**, and **water chemistry** samples. If appropriate, add a **cross-sectional diagram** and indicate slope of side.

ASSESSMENT AREA DESCRIPTION AND COMMENTS

Overall site description and details on site hydrology, soil, and vegetation.

VEGETATION PLOT SPECIES TABLE

Cover Classes 1: trace 2: <1% 3: 1-<2% 4: 2-<5% 5: 5-<10% 6: 10-<25% 7: 25-<50% 8: 50-<75% 9: 75-<95% 10: >95%

Scientific Name or Pseudonym	Coll #	Press (v)	Photos	Cover Class	Workspace

GROUND COVER BY HABITAT TYPE			
<i>Estimate cover of each ground cover by habitat type. Estimate cover based on 1% or 5% increments (not cover classes).</i>			
Cover (unless otherwise noted) →	C	Comments	
Actual cover of water (any depth, vegetated or not, standing or flowing) (A+B+C below)		These values do not add to overall score, and are used for plots performed in a Level 3 assessment, which is beyond the scope of this project. though sheet says level 2.5	
Actual cover of open water zone and no vegetation (or only algae) (A)			
Actual cover of water zone with emergent vegetation (B)			
Actual cover of water zone with submergent / floating vegetation (C)			
Actual predominant depth of water (cm)			
Actual max depth of water (cm)			
Potential cover of water at ordinary high water			
Potential predominant depth at ordinary high water (cm)			
Stability of water level (Pick one: A: permanent and stable / B: permanent but fluctuates / C: intermittent or ephemeral)			
Cover of exposed bare ground (any substrate, can have algae cover)			
Cover of litter (all cover, including under water or vegetation)			
Depth of litter (cm) – average of four non-trampled locations where litter occurs			
Count of standing dead trees (>25 cm diameter at breast height)			
Cover of standing dead shrubs or small trees (<25 cm diameter at breast height)			
Cover of downed coarse woody debris (fallen trees, rotting logs, >25 cm diameter)			
Cover of downed fine woody debris (<25 cm diameter)			
Cover bryophytes (all cover, including under water, vegetation or litter cover)			
Cover lichens (all cover, including under water, vegetation or litter cover)			
Cover algae (all cover, including under water, vegetation or litter cover)			
VERTICAL STRATA BY HABITAT TYPE			
<i>Estimate cover of each vertical strata by habitat type. Estimate height using classes. Estimate cover base on 1% or 5% increments (not classes).</i>			
Height Classes 0: <0.2 m 1: 0.2–0.5 m 2: 0.5–1m 3: 1–2 m 4: 2–5 m 5: 5–10 m 6: 10–15 m 7: 15–20 m 8: 20–35 m 9: 35–50 m 10: >50 m			
Vertical Vegetation Strata (live or very recently dead)	Height / Cover →	H	C
(T1) Dominant canopy trees (>5 m and >~30% cover)			
(T2) Sub-canopy trees (>5m but < dominant canopy height) or trees with sparse cover			
(S1) Tall shrubs, tree saplings or seedling (>2 m)			
(S2) Short shrubs (<2 m)			
(HT) Herbaceous total			
(H1) Graminoids (grass and grass-like plants)			
(H2) Forbs (all non-graminoids)			
(AQ) Submergent or floating aquatics			

SOIL PROFILE DESCRIPTION – SOIL PIT 1 Representative Pit? **WP # _____ Photo #s _____ (mark on site sketch)**

Depth to saturated soil (+/- cm): _____ Depth to free water (+/- cm): _____ Pit dry and groundwater not observed Settling Time: _____

Horizon (optional)	Depth (cm)	Matrix Color (moist)	Dominant Redox Features		Secondary Redox Features		Texture	Remarks (note % visible salts in each layer)
			Color (moist)	%	Color (moist)	%		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<p>Hydric Soil Indicators: See field manual for descriptions and check all that apply to pit.</p> <p><input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Gleyed Matrix (S4/F2)</p> <p><input type="checkbox"/> Histic Epipedon (A2/A3) <input type="checkbox"/> Depleted Matrix (A11/A12/F3)</p> <p><input type="checkbox"/> Mucky Mineral (S1/F1) <input type="checkbox"/> Redox Features (S5/F6/F8/S6/F7)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (A4) <input type="checkbox"/> No Hydric Indicators</p>	<p>Comments: _____</p>	<p>Major Soil Type:</p> <p><input type="checkbox"/> Histosol</p> <p><input type="checkbox"/> Histic Epipedon</p> <p><input type="checkbox"/> Clayey/Loamy</p> <p><input type="checkbox"/> Sandy</p>
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SOIL PROFILE DESCRIPTION – SOIL PIT 2 Representative Pit? **WP # _____ Photo #s _____ (mark on site sketch)**

Depth to saturated soil (+/- cm): _____ Depth to free water (+/- cm): _____ Pit dry and groundwater not observed Settling Time: _____

Horizon (optional)	Depth (cm)	Matrix Color (moist)	Dominant Redox Features		Secondary Redox Features		Texture	Remarks (note % visible salts in each layer)
			Color (moist)	%	Color (moist)	%		
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<p>Hydric Soil Indicators: See field manual for descriptions and check all that apply to pit.</p> <p><input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Gleyed Matrix (S4/F2)</p> <p><input type="checkbox"/> Histic Epipedon (A2/A3) <input type="checkbox"/> Depleted Matrix (A11/A12/F3)</p> <p><input type="checkbox"/> Mucky Mineral (S1/F1) <input type="checkbox"/> Redox Features (S5/F6/F8/S6/F7)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (A4) <input type="checkbox"/> No Hydric Indicators</p>	<p>Comments: _____</p>	<p>Major Soil Type:</p> <p><input type="checkbox"/> Histosol</p> <p><input type="checkbox"/> Histic Epipedon</p> <p><input type="checkbox"/> Clayey/Loamy</p> <p><input type="checkbox"/> Sandy</p>
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SOIL PROFILE DESCRIPTION – SOIL PIT 3 **Representative Pit?** **WP # _____ Photo #s _____ (mark on site sketch)**

Depth to saturated soil (+/- cm): _____ Depth to free water (+/- cm): _____ Pit dry and groundwater not observed Settling Time: _____

Horizon (optional)	Depth (cm)	Matrix Color (moist)	Dominant Redox Features Color (moist) %	Secondary Redox Features Color (moist) %	Texture	Remarks (note % visible salts in each layer)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

<p>Hydric Soil Indicators: See field manual for descriptions and check all that apply to pit.</p> <p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Gleyed Matrix (S4/F2) <input type="checkbox"/> Histic Epipedon (A2/A3) <input type="checkbox"/> Depleted Matrix (A11/A12/F3) <input type="checkbox"/> Mucky Mineral (S1/F1) <input type="checkbox"/> Redox Features (S5/F6/F8/S6/F7) <input type="checkbox"/> Hydrogen Sulfide Odor (A4) <input type="checkbox"/> No Hydric Indicators </p>	<p>Comments: _____</p> <p>Major Soil Type:</p> <p> <input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Clayey/Loamy <input type="checkbox"/> Sandy </p>
--	--

BASIC WATER CHEMISTRY – PH, EC, AND TEMPERATURE MEASUREMENTS **No water observed**

Take pH, EC, and water temperature recording at up to four locations within the AA and circle the appropriate characteristics. Take measurements within representative examples of the water within or adjacent to the AA, including channels, pools, and/or groundwater. Take GPS Waypoints at each location. Estimate water depth in cm, + for surface water, - for groundwater.

#	GPS WP#	Time of day	Location	Depth (+/- cm)	Surface-OR Ground	Standing-OR-Flowing (NA for ground)	Clear-OR-Turbid (NA for ground)	Open-OR-Shade (NA for ground)	pH	EC	Temp
1					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			
2					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			
3					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			
4					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			
5					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			
6					Surface -/ Ground	Standing / Flowing	Clear -/ Turbid	Open -/ Shade			

Water chemistry measurement comments: _____

2015 COLORADO WETLAND ECOLOGICAL INTEGRITY ASSESSMENT (EIA) – METRICS

LANDSCAPE METRICS			
L1. CONTIGUOUS NATURAL LAND COVER		L2. LAND USE INDEX	
Select the statement that best describes the contiguous natural land cover within the 500 m envelope surrounding the AA. See list of natural land covers in the field manual.		Select the statement that best describes the intensity of surrounding land use. Use the Land Use Index Worksheet (last page) to calculate the Land Use Index score.	
Intact: AA embedded in 90–100% contiguous natural land cover.	A	Land Use Index = 9.5–10.0	A
Variegated: AA embedded in 60–90% contiguous natural land cover.	B	Land Use Index = 8.0–9.4	B
Fragmented: AA embedded in 20–60% contiguous natural land cover.	C	Land Use Index = 4.0–7.9	C
Relictual: AA embedded within <20% contiguous natural land cover.	D	Land Use Index = <4.0	D
Landscape comments:			
BUFFER METRICS			
B1. PERIMETER WITH NATURAL BUFFER		B2. WIDTH OF NATURAL BUFFER	
Select the statement that best describes the perimeter of the AA with natural buffer . Buffer land covers must be ≥ 5 m wide and extend along ≥ 10 m of the AA perimeter. See list of buffer land covers in the field manual.		Select the statement that best describes the width of the natural buffer . Estimate the width of buffer land covers along eight lines radiating out from the AA at the cardinal and ordinal directions (N, NE, E, SE, S, SW, W, NW) and average their width. Estimate up to 100 m.	
Natural buffer surrounds 100% of the AA perimeter.	A	Average buffer width is 100 m	A
Natural buffer surrounds 75–99% of the AA perimeter.	B	Average buffer width is 75–99 m	B
Natural buffer surrounds 25–74% of the AA perimeter.	C	Average buffer width is 25–74 m	C
Natural buffer surrounds <25% of the AA perimeter.	D	Average buffer width is <25 m	D
B3. CONDITION OF NATURAL BUFFER			
Select the statement that best describes the natural buffer condition . Select one statement per column. Only consider <u>the actual natural buffer</u> measured in metrics above. <i>Remember to look for non-native hay grasses when evaluating native / non-native vegetation in the buffer.</i>			
Abundant (≥95%) relative cover native vegetation and little or no (<5%) cover of non-native plants.	A	Intact soils, no water quality concerns, little or no trash, AND little or no evidence of human visitation.	A
Substantial (75–95%) relative cover of native vegetation and low (5–25%) cover of non-native plants.	B	Intact or minor soil disruption, minor water quality concerns, moderate or lesser amounts of trash, AND/OR minor intensity of human visitation or recreation.	B
Low (25–75%) relative cover of native vegetation and moderate to substantial (25–75%) cover of non-native plants.	C	Moderate or extensive soil disruption, moderate to strong water quality concerns, moderate or greater amounts of trash, AND/OR moderate intensity of human use.	C
Very low (<25%) relative cover of native vegetation and dominant (>75% cover) of non-native plants OR no buffer exists.	D	Barren ground and highly compacted or otherwise disrupted soils, significant water quality concerns, substantial amounts of trash, extensive human use, OR no buffer exists.	D
Buffer comments:			

VEGETATION COMPOSITION METRICS

V1. NATIVE PLANT SPECIES COVER (RELATIVE)		V2. INVASIVE NONNATIVE PLANT SPECIES COVER (ABSOLUTE)	
Select the statement that best describes the <u>relative cover</u> of native plant species within the AA.		Select the statement that best describes the <u>absolute cover</u> of invasive nonnative plant species within the AA. Use list provided in the manual.	
AA contains >99% relative cover of native plant species.	A	Invasive nonnative species are absent from all strata.	A
AA contains 95–99% relative cover of native plant species.	B	Invasive species present, but sporadic (<4% absolute cover).	B
AA contains 85–95% relative cover of native plant species.	C	Noxious weeds somewhat abundant (4–10% cover).	C
AA contains 60–85% relative cover of native plant species.	C-	Noxious weeds abundant (10–30% cover).	C-
AA contains <60% relative cover of native plant species.	D	Noxious weed very abundant (>30% cover).	D

V3. NATIVE PLANT SPECIES COMPOSITION

Select the statement that best describes the native plant species composition (species abundance and diversity) within the AA. Look for native species diagnostic of the system vs. native increasers that may thrive in human disturbance.	
Native plant species composition with expected natural conditions: i) Typical range of native diagnostic species present, AND ii) Native species sensitive to anthropogenic degradation are present, AND iii) Native species indicative of anthropogenic disturbance (i.e., increasers, weedy or ruderal species) absent to minor.	A
Native plant species composition with minor disturbed conditions: i) Some native diagnostic species absent or substantially reduced in abundance, OR ii) Native species indicative of anthropogenic disturbance are present with low cover.	B
Native plant species composition with moderately disturbed conditions: i) Many native diagnostic species absent or substantially reduced in abundance, OR ii) Native species indicative of anthropogenic disturbance are present with moderate cover.	C
Native plant species composition with severely disturbed conditions: i) Most or all native diagnostic species absent, a few remain in low cover, OR ii) Native species indicative of anthropogenic disturbance are present with high cover.	D
Vegetation composition comments:	

VEGETATION STRUCTURE METRICS

V4. VEGETATION STRUCTURE (VERTICAL AND HORIZONTAL)	
Select the statement below that best describes the overall vertical and horizontal structure within the AA. Vertical structure relates to the number of vertical vegetation strata. Horizontal structure relates to the number and complexity of biotic and abiotic patches within the wetland/riparian area. See reference card for potential structural patches. Assess each site based on the expected conditions within its Ecological System type. For woody systems, rate regeneration and woody debris individually on next page, then consider those ratings in the overall assessment of structure.	
Herbaceous systems: Marsh, Meadow, Playa	Woody systems: Riparian and Floodplain
<i>General: Vegetation structure is at or near minimally disturbed natural conditions. Little to no structural indicators of degradation evident.</i>	
Structural patches/zones are appropriate in number and type for the system (can be few in playas, fens, meadows). There is diversity in vertical strata within the herbaceous vegetation (some tall and some short layers and/or low cover of shrubs or trees, where appropriate). Litter and other organic inputs are typical of the system (i.e., playas should have low litter while meadows and marshes should have moderate amounts of litter).	AA is characterized by a complex array of nested or interspersed patches. Canopy (if present) contains a mosaic of different ages or sizes, including large old trees and obvious regeneration. Number of live stems is well within expected range. Shrub and herbaceous layers are complex, providing a diversity of vertical strata. Woody species are of sufficient size and density to provide future woody debris to stream or floodplain. Litter layer is neither lacking nor extensive.
A	

<i>General: Vegetation structure shows minor alterations from natural conditions.</i>			
<p>Marshes: cattail and bulrush density may prevent animal movement in some areas of the wetland, but not throughout.</p> <p>Meadows: grazing and mowing have minor effects.</p> <p>Playas: natural areas of bare ground are still prevalent, though non-native or weedy species may be encroaching.</p>		AA is characterized by a moderate array of nested or interspersed zones with no single dominant zone, though some structural patches (especially open zones) may be missing. Canopy still heterogeneous in age or size, but may be missing some age classes. Vertical strata may be somewhat less complex than natural conditions. Woody debris or litter may be somewhat lacking.	B
<i>General: Vegetation structure is moderately altered from natural conditions.</i>			
<p>Marshes: cattail and bulrush density may prevent animal movement in half or more of the wetland.</p> <p>Meadows: grazing and mowing have moderate effects.</p> <p>Playas: natural areas of bare ground are present, but non-native or weedy species have filled in many area.</p>		AA is characterized by a simple array of nested or interspersed zones. One zone may dominate others. Vertical strata may be moderately less complex than natural conditions. Site may be denser than natural conditions (due to non-native woody species) or may be more open and decadent. Woody debris or litter may be moderately lacking.	C
<i>General: Vegetation structure is greatly altered from natural conditions.</i>			
<p>Marshes: cattail and bulrush density prevent animal movement throughout the wetland.</p> <p>Meadows: grazing and mowing greatly affect the structure of the vegetation and prevalence of litter.</p> <p>Playas: natural areas of bare ground are absent due to an abundance of non-native or weedy species.</p>		AA is characterized by one dominant zone and several expected structural patches or vertical strata are missing. Site is either extremely dense with non-native woody species or open with predominantly decadent or dead trees. Woody debris and/or litter may be absent entirely or may be excessive due to decadent trees.	D
V5. REGENERATION OF NATIVE WOODY SPECIES		V6. COARSE AND FINE WOODY DEBRIS	
Select the statement that best describes the regeneration of native woody species within the AA.		Select the statement that best describes coarse and fine woody debris within the AA.	
Woody species are naturally uncommon or absent.	NA	There are no obvious inputs of woody debris or woody species are naturally uncommon.	NA
All age classes of <i>native</i> woody species present. Native tree saplings /seedlings and shrubs common to the type present in expected amounts and diversity. Regeneration is obvious.	A	AA characterized by moderate amount of coarse and fine woody debris, relative to expected conditions. There is wide size-class diversity of standing snags and downed logs in various stages of decay. For riverine wetlands, debris is sufficient to trap sediment, but does not inhibit stream flow. For non-riverine wetlands, woody debris provides structural complexity, but does not overwhelm the site.	A/B
Age classes of <i>native</i> woody species restricted to mature individuals and young sprouts. Middle age groups appear to be absent or there is some other indication that regeneration is moderately impacted.	B		
<i>Native</i> woody species comprised of mainly mature individuals OR mainly evenly aged young sprouts that choke out other vegetation. Regeneration is obviously impacted. Site may contain Russian Olive and/or Salt Cedar.	C	AA characterized by small amounts of woody debris OR debris is somewhat excessive. For riverine wetlands, lack of debris may affect stream temperatures and reduce available habitat.	C
<i>Native</i> woody species predominantly consist of decadent or dying individuals OR are absent from an area that should be wooded. Site may be dominated by Russian Olive / Salt Cedar.	D	AA lacks woody debris, even though inputs are available.	D
Vegetation structure comments (including regeneration and woody debris):			

HYDROLOGY METRICS

H1. WATER SOURCE

Check off all *major* water sources in the table to the right. Select the statement below that best describes the **water sources** feeding the AA during the growing season.

- | | |
|--|--|
| <input type="checkbox"/> Overbank flooding | <input type="checkbox"/> Irrigation via direct application |
| <input type="checkbox"/> Alluvial aquifer | <input type="checkbox"/> Irrigation via seepage |
| <input type="checkbox"/> Groundwater discharge | <input type="checkbox"/> Irrigation via tail water run-off |
| <input type="checkbox"/> Natural surface flow | <input type="checkbox"/> Urban run-off / culverts |
| <input type="checkbox"/> Precipitation | <input type="checkbox"/> Pipes (directly feeding wetland) |
| <input type="checkbox"/> Snowmelt | <input type="checkbox"/> Other: |

Water sources are natural. Site hydrology is fed by precipitation, groundwater, natural runoff, or natural flow from an adjacent freshwater body. The system may naturally lack water at times, even for several years. There is no indication of direct artificial water sources, either point sources or non-point sources. Land use in the local watershed is primarily open space or low density, passive use with little irrigation.

A

Water sources are mostly natural, but also include occasional or small amounts of inflow from anthropogenic sources. Indications of anthropogenic sources include developed land or irrigated agriculture that comprises < 20% of the immediate drainage area, some road runoff, small storm drains or other minor point source discharges. No large point sources control the overall hydrology.

B

Water sources are moderately impacted by anthropogenic sources, but are still a mix of natural and non-natural sources. Indications of moderate contribution from anthropogenic sources include developed land or irrigated agriculture that comprises 20–60% of the immediate drainage area or moderate point source discharges into the wetland, such as many small storm drains or a few large ones or many sources of irrigation runoff. The key factors to consider are whether the wetland is located in a landscape position that supported wetlands before irrigation / development *AND* whether the wetland is still connected to its natural water source (e.g., modified ponds on a floodplain that are still connected to alluvial aquifers or natural stream channels that now receive substantial irrigation return flows).

C

Water sources are primarily from anthropogenic sources (e.g., urban runoff, direct irrigation, pumped water, artificially impounded water, or another artificial hydrology). Indications of substantial artificial hydrology include developed or irrigated agricultural land that comprises > 60% of the immediate drainage basin of the AA, or the presence of major drainage point source discharges that obviously control the hydrology of the AA. The key factors to consider are whether the wetland is located in a landscape position that likely never supported a wetland prior to human development *OR* did support a wetland, but is now disconnected from its natural water source. The reason the wetland exists is because of direct irrigation, irrigation seepage, irrigation return flows, urban storm water runoff, or direct pumping.

D

Water source comments:

H2. HYDROPERIOD

Select the statement below that best describes the **hydroperiod** within the AA (extent and duration of inundation and/or saturation). Search the AA and 500 m envelope for hydrologic stressors (see list on following pages). Use best professional judgment to determine the overall condition of the hydroperiod. For some wetlands, this may mean that water is being channelized or diverted away from the wetland. For others, water may be concentrated or increased. *Please add comments on next page.*

Hydroperiod is characterized by natural patterns of inundation/saturation and drawdown and/or flood frequency, duration, level and timing. There are no major hydrologic stressors that impact the natural hydroperiod. Riparian channels are characterized by equilibrium conditions with no evidence of severe aggradation or degradation indicative of altered hydrology.

A

Hydroperiod inundation and drying patterns deviate slightly from natural conditions due to presence of stressors such as: flood control/water storage dams upstream; berms or roads at/near grade; minor pugging by livestock; small ditches or diversions removing water; or minor flow additions from irrigation return flow or storm water runoff. Outlets may be slightly constricted, but not to significantly slow outflow. Riparian channels may have some sign of aggradation or degradation, but approach equilibrium conditions. Playas are not significantly impacted pitted or dissected. *If wetland is artificially controlled*, the management regime closely mimics a natural analogue (it is very unusual for a purely artificial wetland to be rated in this category).

B

Hydroperiod inundation and drying patterns deviate moderately from natural conditions due to presence of stressors such as: flood control/water storage dams upstream or downstream that moderately effect hydroperiod; two lane roads; culverts adequate for base stream flow but not flood flow; moderate pugging by livestock that could channelize or divert water; shallow pits within playas; ditches or diversions 1–3 ft. deep; or moderate flow additions. Outlets may be moderately constricted, but flow is still possible. Riparian channels may show distinct signs of aggradation or degradation. *If wetland is artificially controlled*, the management regime approaches a natural analogue. Site may be passively managed, meaning that the hydroperiod is still connected to and influenced by natural high flows timed with seasonal water levels.

C

Hydroperiod inundation and drawdown patterns deviate substantially from natural conditions from high intensity alterations such as: significant flood control / water storage das upstream or downstream; a 4-lane highway; large dikes impounding water; diversions > 3ft. deep that withdraw a significant portion of flow, deep pits in playas; large amounts of fill; significant artificial groundwater pumping; or heavy flow additions. Outlets may be significantly constricted, blocking most flow. Riparian channels may be concrete or artificially hardened. *If wetland is artificially controlled*, the site is actively managed and not connected to any natural season fluctuations.

D

Hydroperiod comments:

H3. HYDROLOGIC CONNECTIVITY

Select the statement below that best describes the degree to which **hydrology within the AA is connected to the larger landscape** throughout the year, but particularly at times of high water. Consider the effect of impoundments, entrenchment, or other obstructions to connectivity that occur within the surrounding landscape, if those impoundments clearly impact the AA.

<i>Marsh / Meadow variant</i>	<i>Playa variant</i>	<i>Riverine / Riparian variant</i>	
No unnatural obstructions to lateral or vertical movement of surface or ground water. Rising water in the site has unrestricted access to adjacent upland, without levees, excessively high banks, artificial barriers, or other obstructions to the lateral movement of flood flows.	Surrounding land cover / vegetation does not interrupt surface flow. No artificial channels feed water to playa.	Completely connected to floodplain (backwater sloughs and channels). No geomorphic modifications made to contemporary floodplain. Channel is not entrenched.	A
Minor restrictions to the lateral or vertical movement of surface and ground water by unnatural features such as levees, road grades or excessively high banks. Up to 25% of the site may be restricted by barriers to drainage. Restrictions may be intermittent along the margins of the AA, or they may occur only along one bank or shore. Flood flows may exceed the impoundments, but drainage back into the wetland may be incomplete due to the impoundments.	Surrounding land cover / vegetation may interrupt a minor amount of surface flow. Artificial channels may feed minor amounts of excess water to playa.	Minimally disconnected from floodplain. Up to 25% of stream banks may be affected by dikes, rip rap, and/or elevated culverts. Channel may be somewhat entrenched, but overbank flow occurs during most floods.	B
Moderate restrictions to the lateral or vertical movement of surface and ground water by unnatural features such as levees, road grades or excessively high banks. Between 25–75% of the site may be restricted by barriers to drainage. Flood flows may exceed the impoundments, but drainage back into the wetland may be incomplete due to the impoundments.	Surrounding land cover / vegetation may interrupt a moderate amount of surface flow. Artificial channels may feed moderate amounts of excess water to playa.	Moderately disconnected from floodplain due to multiple geomorphic modifications. Between 25-75% of stream banks may be affected by bikes, rip rap, concrete, and/or elevated culverts. Channel may be moderately entrenched and disconnected from the floodplain except in large floods.	C
Essentially no hydrologic connection to adjacent landscape. Most or all stages may be contained within artificial banks, levees, or comparable features. Greater than 75% of the site is restricted by barriers to drainage.	Surrounding land cover / vegetation may dramatically restrict surface flow. Artificial channels may feed significant amounts of excess water to playa.	Channel is severely entrenched and entirely disconnected from the floodplain. More than 75% of stream banks may be affected by dikes, rip rap, concrete and/or elevated culverts. Overbank flow never occurs or only in severs floods.	D

Hydrologic connectivity comments:

PHYSIOCHEMICAL METRICS

S1. SUBSTRATE / SOIL DISTURBANCE

Select the statement below that best describes disturbance to the substrate or soil within the AA. For playas, the most significant substrate disturbance is sedimentation or unnaturally filling, which prevents the system's ability to pond after heavy rains. For other wetland types, disturbances may lead to bare or exposed soil and may increase ponding or channelization where it is not normally. For any wetland type, consider the disturbance relative to what is expected for the system.

No soil disturbance within AA. Little bare soil OR bare soil areas are limited to naturally caused disturbances such as flood deposition or game trails OR soil is naturally bare (e.g., playas). No pugging, soil compaction, or sedimentation.	A
Minimal soil disturbance within AA. Some amount of bare soil, pugging, compaction, or sedimentation present due to human causes, but the extent and impact are minimal. The depth of disturbance is limited to only a few inches and does not show evidence of altering hydrology. Any disturbance is likely to recover within a few years after the disturbance is removed.	B
Moderate soil disturbance within AA. Bare soil areas due to human causes are common and will be slow to recover. There may be pugging due to livestock resulting in several inches of soil disturbance. ORVs or other machinery may have left some shallow ruts. Sedimentation may be filling the wetland. Damage is obvious, but not excessive. The site could recover to potential with the removal of degrading human influences and moderate recovery times.	C
Substantial soil disturbance within AA. Bare soil areas substantially degrade the site and have led to altered hydrology or other long-lasting impacts. Deep ruts from ORVs or machinery may be present, or livestock pugging and/or trails are widespread. Sedimentation may have severely impacted the hydrology. The site will not recover without active restoration and/or long recovery times.	D

Substrate / soil comments and photo #'s:

S2. SURFACE WATER TURBIDITY / POLLUTANTS	S3. ALGAL GROWTH
---	-------------------------

Select the statement that best describes the turbidity or evidence or pollutants in surface water within the AA.		Select the statement that best describes algal growth within surface water in the AA. Exclude <i>Chara</i> (multicellular algae) in cover estimate.	
No open water in AA	NA	No open water in AA or evidence of open water.	NA
No visual evidence of turbidity or other pollutants.	A	Water is clear with minimal algal growth.	A
Some turbidity in water (such as turbidity caused by high flows or naturally occurring in playas) OR presence of other pollutants, but limited to small and localized areas within the wetland. Water may be slightly cloudy.	B	Algal growth is limited to small and localized areas of the wetland. Water may have a greenish tint or cloudiness.	B
Water is cloudy or has unnatural oil sheen, but the bottom is still visible. <i>Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution.</i>	C	Algal growth occurs in moderate to large patches throughout the AA. Water may have a moderate greenish tint or sheen.	C
Water is milky and/or muddy or has unnatural oil sheen. The bottom is difficult to see. <i>Note: If the sheen breaks apart when you run your finger through it, it is a natural bacterial process and not water pollution.</i>	D	Algal mats are extensive, blocking light to the bottom. Water may have a strong greenish tint and the bottom is difficult to see.	D

Water quality comments and photo #'s:

Turbidity and algal growth may be natural depending on recent weather patterns and flow timing (i.e., higher flows are often more turbid). Please rank the system as you see it, regardless of whether the conditions are natural. Include good notes and take photos.

SIZE METRICS

Z1. COMPARATIVE SIZE

Select the statement below that best describes the **absolute size** of the wetland, as compared with others of its type.

<i>Meadows and Marshes</i>	<i>Playas and Fens</i>	<i>Riparian Areas</i>	
>10 hectares (>25 acres)	>2 hectares (>5 acres)	>5 km (>3 miles)	A
2–10 hectares (25 acres)	0.5–2 hectares (5 acres)	1–5 km (3 miles)	B
0.5–2hectares (5 acres)	0.1–0.5 hectares (1 acre)	0.1–1 km (0.6 mile)	C
<0.5 hectare (<1 acre)	<0.1 hectare (<0.25 acre)	<0.1 km (<0.06 mile)	D

Comparative size comments:

Z2. CHANGE IN SIZE

Select the statement below that best describes the **change in size** of the wetland.

Occurrence is at, or only minimally reduced (<15%) from its original, natural extent, and has not been artificially reduced in size.	A
Occurrence is only somewhat reduced (15-10%) from its original natural extent.	B
Occurrence is modestly reduced (10-30%) from its original, natural extent.	C
Occurrence is substantially reduced (>30%) from its original, natural extent.	D

Change in size comments:

Land Use Index Worksheet

<i>Land Use Categories</i> ¹	<i>Coefficient</i>	<i>500 m Envelope</i>	
		<i>% Area</i>	<i>Score</i>
Paved roads, parking lots, domestic, commercial, and industrial buildings	0		
Gravel pit operation, open pit mining, strip mining, abandoned mines	0		
Unpaved roads (e.g., driveway, tractor trail, 4-wheel drive roads)	1		
Resource extraction (oil and gas)	1		
Tilled agricultural crop production (corn, wheat, soy, etc.)	2		
Intensively managed golf courses, sports fields, lawns	2		
Vegetation conversion (chaining, cabling, rotochopping, clearcut)	3		
Heavy grazing by livestock	3		
Logging or tree removal with 50-75% of large trees removed	4		
Intense recreation (ATV use / camping / popular fishing spot, etc.)	4		
Permanent crop agriculture (hay pasture, vineyard, orchard)	4		
Dam sites and disturbed shorelines around water storage reservoirs. Include open water of reservoir if there is intensive recreation, such as boating.	5		
Old fields and other disturbed fallow lands dominated by non-native species	5		
Moderate grazing on rangeland	6		
Moderate recreation (high-use trail)	7		
Selective logging or tree removal with <50% of large trees	8		
Light grazing on rangeland	9		
Light recreation (low-use trail)	9		
Natural area / land managed for native vegetation	10		
Total Land Use Score			

Buffer Width Worksheet

1: _____	5: _____
2: _____	6: _____
3: _____	7: _____
4: _____	8: _____
Average width: _____	

~~2015 COLORADO ECOLOGICAL INTEGRITY ASSESSMENT (EIA) STRESSOR CHECKLIST~~

Stressors: *direct threats*; “the proximate (human) activities or processes that have caused, are causing, or may cause the destruction, degradation, and/or impairment of biodiversity and natural processes” or altered disturbance regime (e.g. flooding, fire, or browse).

Some Important Points about Stressors Checklists:

1. The Stressors Checklist must be completed for the 500 m envelop surrounding the AA (Landscape) and for the 0.5 ha AA (Veg, Hydro, Soils). Rely on imagery in combination with what you can field check.
2. Assess stressors in the 500 m envelope for their effects on land surrounding the AA (*NOT how they may impact the AA*)
3. Stressors for Vegetation, Soils, and Hydrology are assessed across the full 0.5 ha assessment area (AA)
4. Severity has been pre-assigned for many stressors. If the severity differs from the pre-assigned rating, cross it out and note the true severity. If there is more than one pre-assigned value, circle the appropriate value.
5. To comment, note the stressor number before writing comments.

Site ID / Name: _____ Date: _____

SCOPE of Threat (% of AA or Buffer affected by direct threat)	
1 = Small	Affects a small portion (1-10%) of the AA or landscape
2 = Restricted	Affects some (11-30%) of the AA or landscape
3 = Large	Affects much (31-70%) of the AA or landscape
4 = Pervasive	Affects all or most (71-100%) of the AA or landscape
SEVERITY of Threat within the defined Scope (degree of degradation to AA or Buffer)	
1 = Slight	Likely to only slightly degrade/reduce
2 = Moderate	Likely to moderately degrade/reduce
3 = Serious	Likely to seriously degrade/reduce
4 = Extreme	Likely to extremely degrade/destroy or eliminate

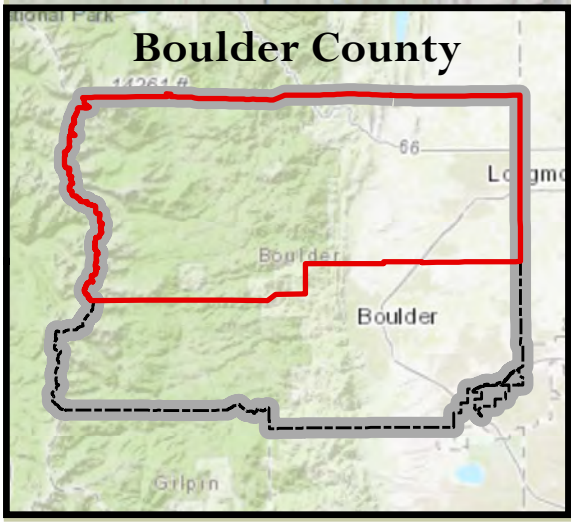
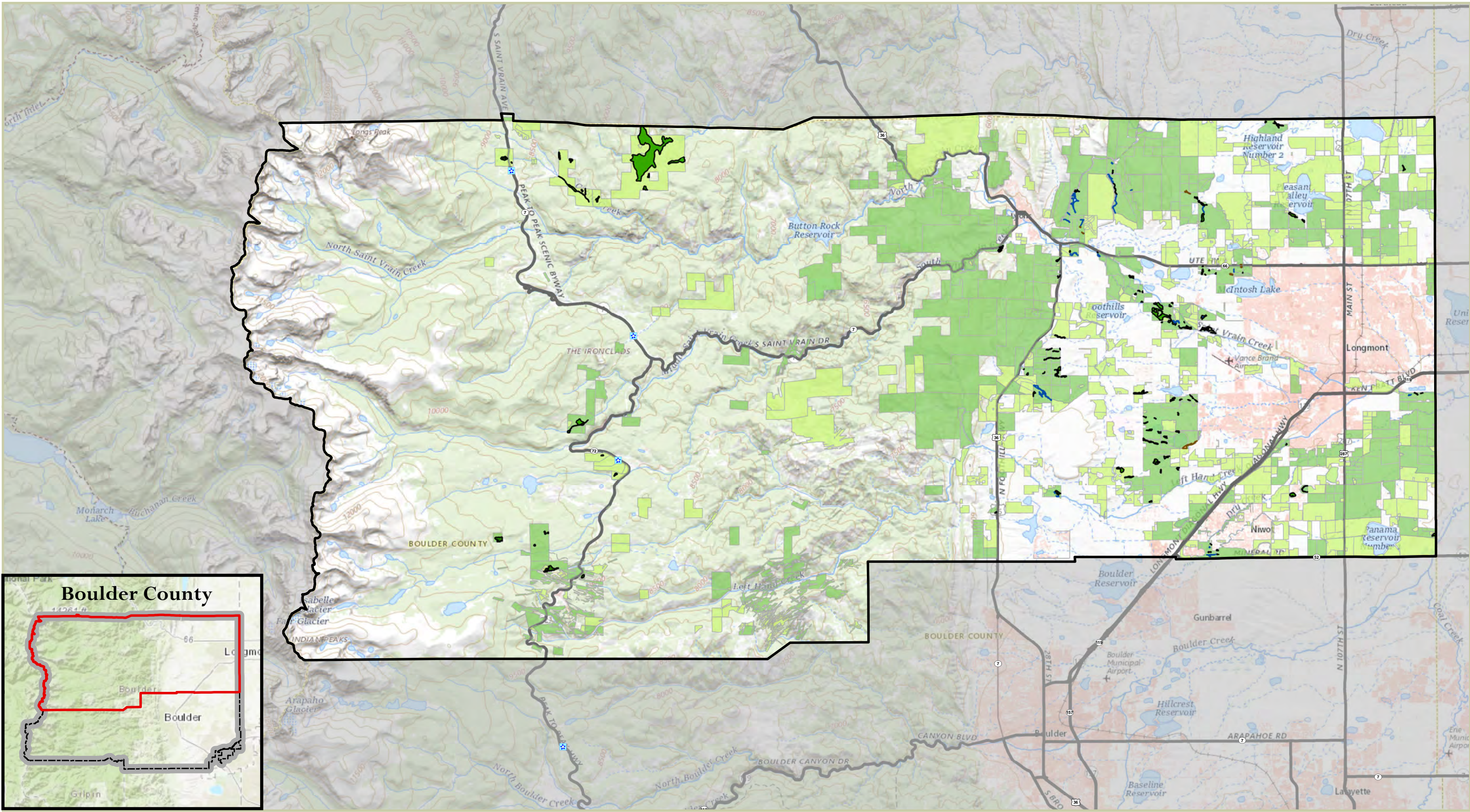
Will not be completing stressors worksheet.










	STRESSORS CHECKLIST	500 m Envelope Landscape			ASSESSMENT AREA (0.5 ha)									Comments		
		Scope	Severity	IMPACT	Vegetation			Soil / Substrate			Hydrology					
					Scope	Severity	IMPACT	Scope	Severity	IMPACT	Scope	Severity	IMPACT			
D	1. Residential, recreational buildings, associated pavement		3													
	2. Industrial, commercial, military buildings, associated pavement		4													
E	3. Oil and gas wells and surrounding footprint		4													
V	4. Roads (gravel=2, paved=3, highway=4), railroad=3		2, 3, 4													
E	5. Sports field, golf course, urban parkland, expansive lawns		2													
L	6. Row-crop agriculture, orchard, nursery		3													
O	7. Hay field, fallow field		2, 3													
P	8. Utility / power line corridor		1, 2, 3			1, 2, 3										
	9. Other [specify]:															
R	10. Low impact recreation (hunting, fishing, camping, hiking, bird-watching, canoe/kayak)		1			1										
E	11. High impact recreation (ATV, mountain biking, motor boats)		3			3										
C	12. Other [specify]:															
V	13. Tree resource extraction (clear cut=3 or 4, selective cut= 2 or 3)		2, 3, 4			2, 3, 4										
	14. Vegetation management (cutting, mowing)		2			2										
E	15. Livestock grazing, excessive herbivory by native species (ungulates, prairie dogs) (low=1, mod=2, high=3)		1, 2, 3			1, 2, 3										
	16. Insect pest damage (low=1, mod=2, high=3)		1, 2, 3			1, 2, 3										
G	17. Invasive plant species (see noxious weed list)		3			3										
	18. Direct application of agricultural chemicals, herbicide spraying		2, 3			2, 3										
	19. Other [specify]:															
N	20a. Evidence of recent fire (low=1, mod=2, high=3)		1, 2, 3			1, 2, 3										
A	20b. Recent beaver dam blowout		1, 2			1, 2										
T	21. Other [specify]:															

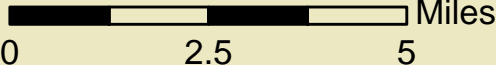

	STRESSORS CHECKLIST	500 m Envelope Landscape			ASSESSMENT AREA (0.5 ha)									Comments	
		Scope	Severity	IMPACT	Vegetation			Soil / Substrate			Hydrology				
					Scope	Severity	IMPACT	Scope	Severity	IMPACT	Scope	Severity	IMPACT		
S O I L S	22. Excessive sediment or organic debris (inputs from recently logged sites, sedimentation in playas)														
	23. Excessive erosion or loss of organic matter (gullyng, decay of organic soils)														
	24. Trash or refuse dumping														
	25. Filling or dumping of sediment (spoils from excavation)														
	26. Substrate removal (excavation)														
	27. Indirect soil disturbance (compaction or trampling by livestock, human use, vehicles)														
	28. Direct soil disturbance (grading, compaction, plowing, discing, deeply dug fire lines)														
	29. Physical resource extraction (rock, sand, gravel, minerals, etc.)														
	30. Obvious excess salinity (dead or stressed plants, salt crusts)														
31. Other [specify]:															
H Y D R O L O G Y	32. PS discharge (waste water treatment, factory discharge, septic)														
	33. NPS discharge (urban / storm water runoff)														
	34. NPS discharge (agricultural runoff, excess irrigation, feedlots, excess manure)														
	35. NPS discharge (mine runoff, discharge from oil and gas)														
	36. Large dams / reservoirs														
	37. Impoundments, berms, dikes, levees that hold water in or out														
	38. Canals, diversions, ditches, pumps that move water in or out														
	39. Excavation for water retention (gravel ponds, pitted playas)														
	40. Groundwater extraction (few small wells=2, extensive extraction cause a lowered water table=4)														
	41. Flow obstructions (culverts, paved stream crossings)														
42. Engineered channel (riprap, armored channel bank, bed)															
43. Control of flow and energy (weir/drop structure, dredging)															
44. Other [specify]:															
Stressors Very Minimal or Not Evident (check box, if true)		<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>			<input type="checkbox"/>				
STRESSOR RATING BY CATEGORY (Envelope, Veg, Soils, Hydro)		Score:	Rating:		Score:	Rating:		Score:	Rating:		Score:	Rating:		HIS Score:	HIS Rating:
OVERALL HUMAN STRESSOR INDEX (HSI) – use category weights		0.3			0.3			0.1			0.3				

Threat Impact Calculator		Scope			
		Pervasive = 4	Large = 3	Restricted = 2	Small = 1
Severity	Extreme = 4	VERY HIGH = 10	High = 7	Medium = 4	Low = 1
	Serious = 3	High = 7	High = 7	Medium = 4	Low = 1
	Moderate = 2	Medium = 4	Medium = 4	Low = 1	Low = 1
	Slight = 1	Low = 1	Low = 1	Low = 1	Low = 1

Category / HSI Roll-up Formulas	
Score	Rating
10+	Very High
7 – 9.9	High
4 – 6.9	Medium
1 – 3.9	Low
0 – 0.9	Absent



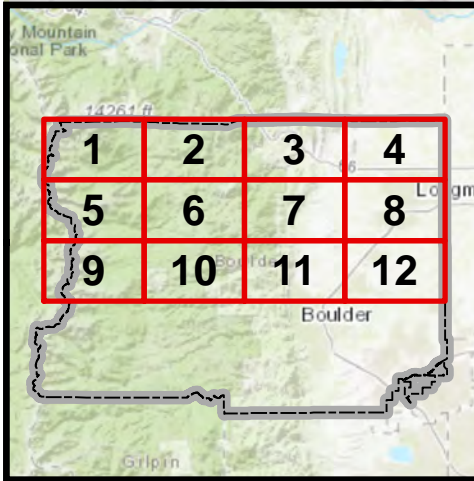
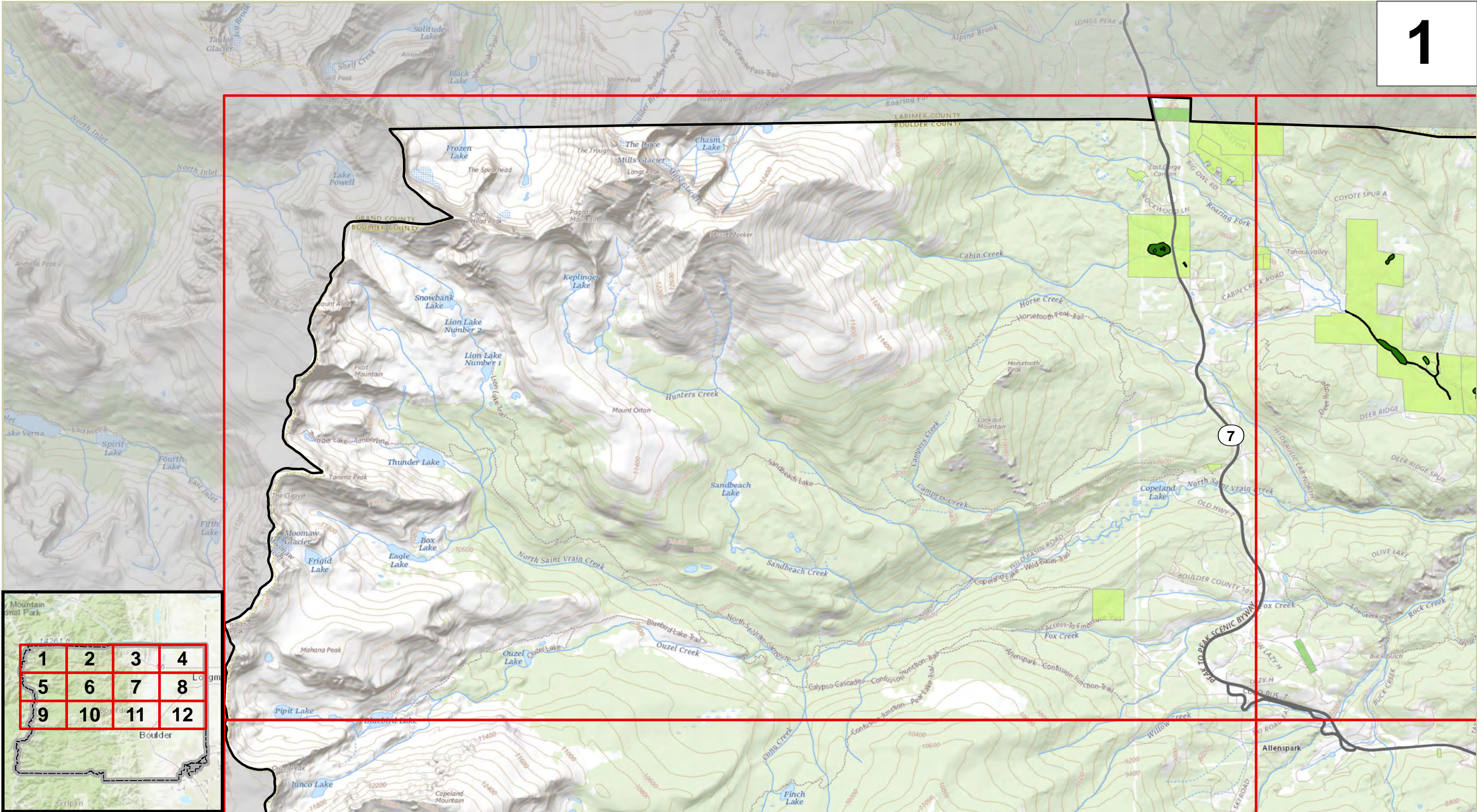
 BCPOS Properties	 Highways	 Alkali Flat	 Forested or Shrub	 Stream or Ditch
 Conservation Easements		 Emergent	 Other	 Pond

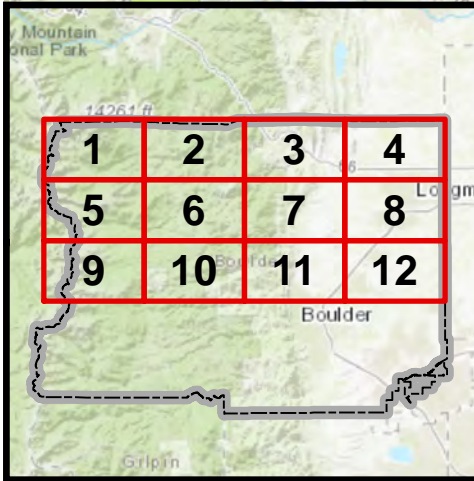
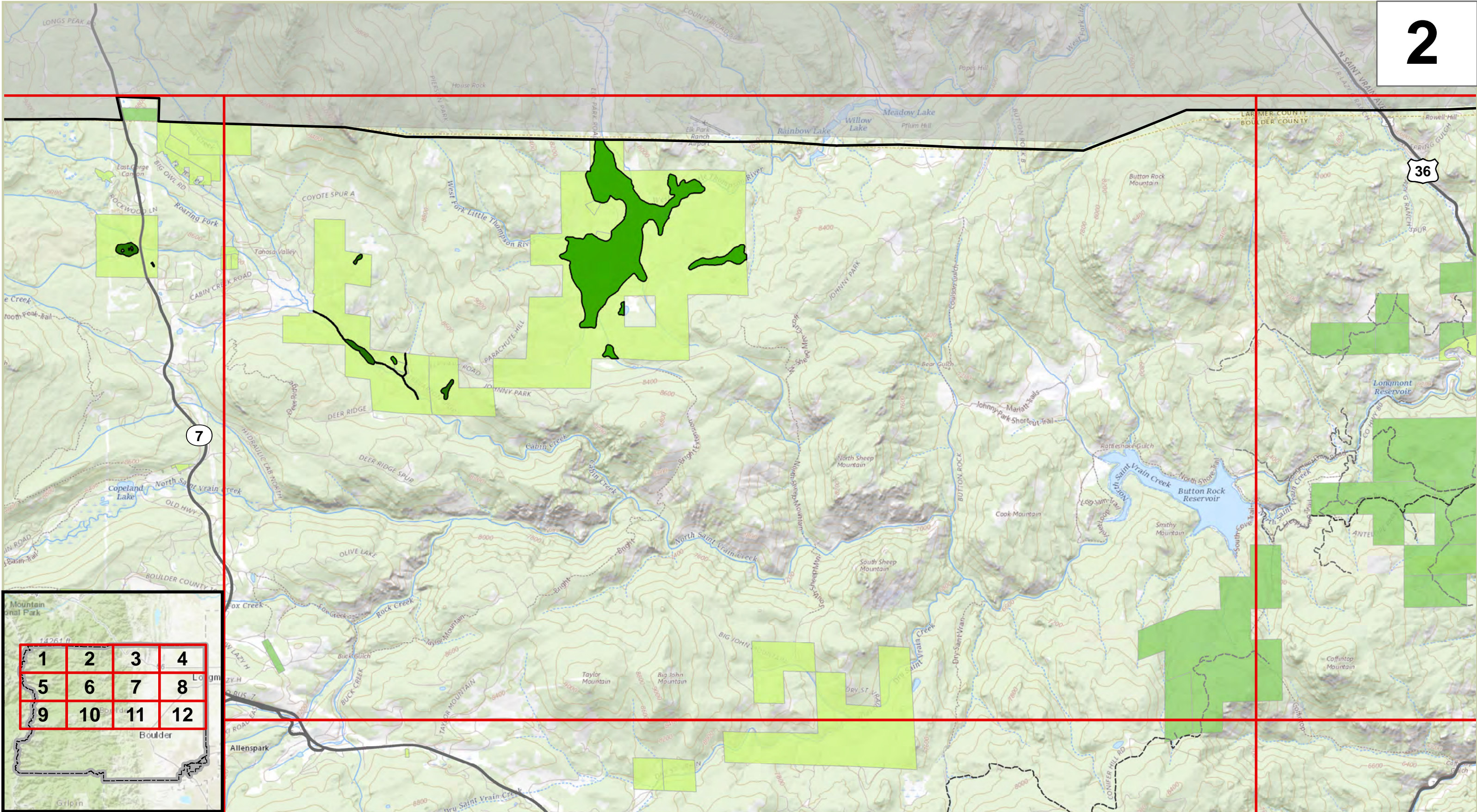
The user agrees to all Terms of Use set forth by Boulder County. For Terms of Use, please visit: www.bouldercounty.org/mapsdisclaimer

North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

1

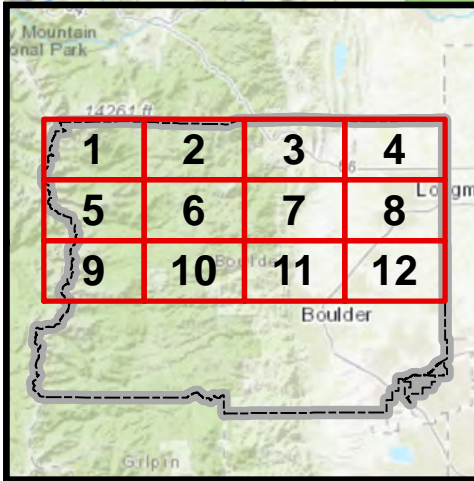
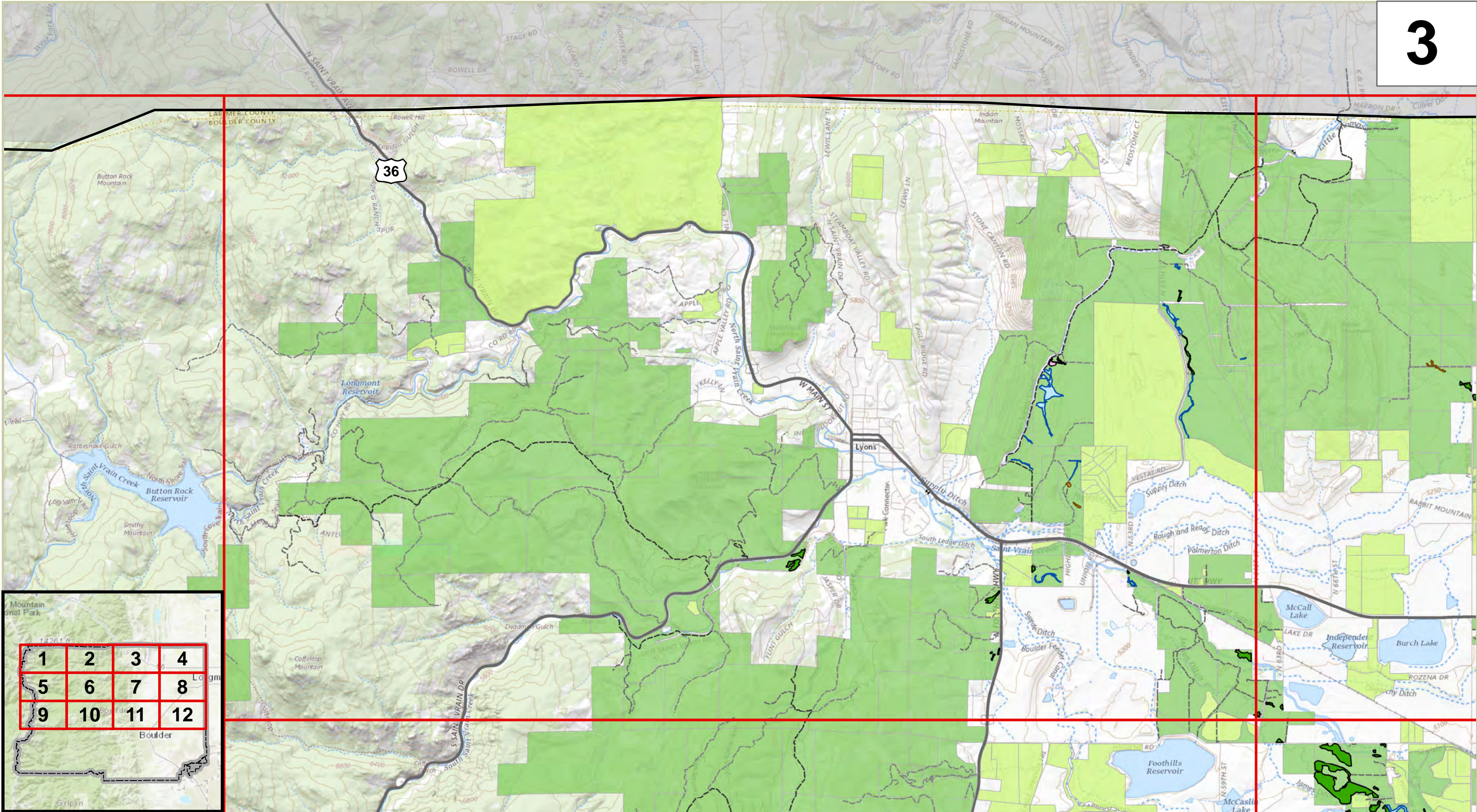


North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

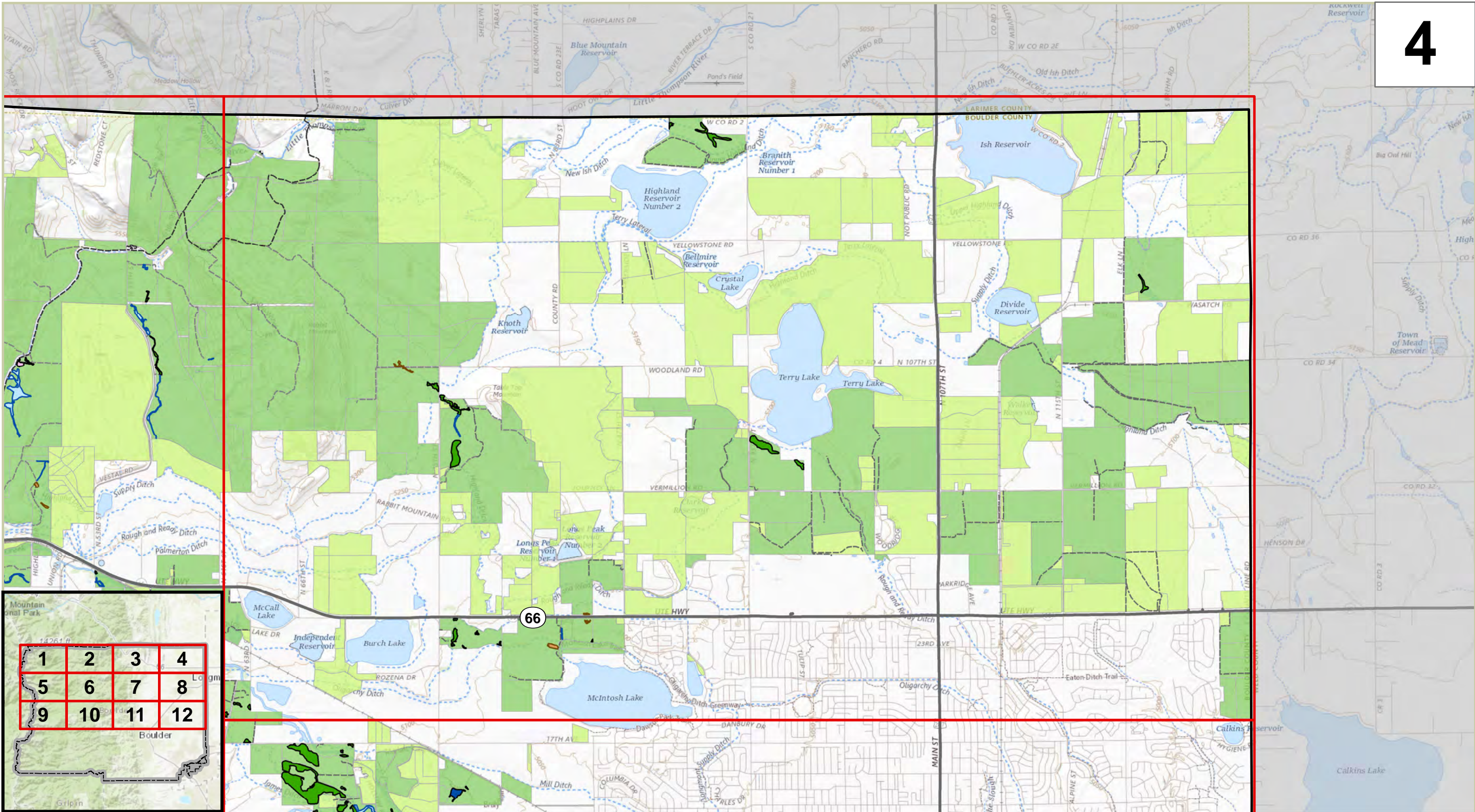


BCPOS Properties	Highways	4WD Access Road	Alkali Flat	Forested or Shrub	Stream or Ditch
Conservation Easements	4WD Jeep Road	Emergent	Other	Pond	

Miles

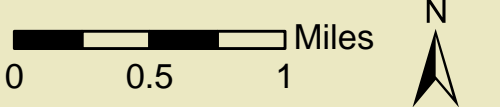


North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview



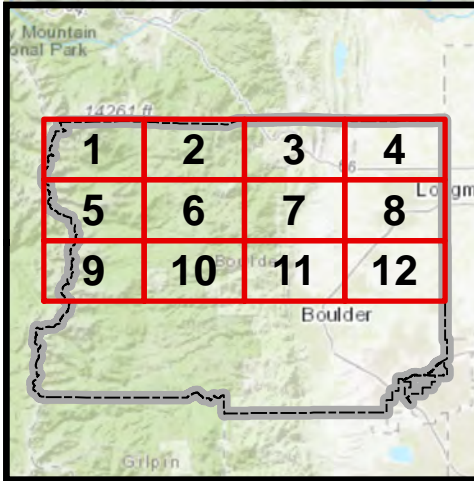
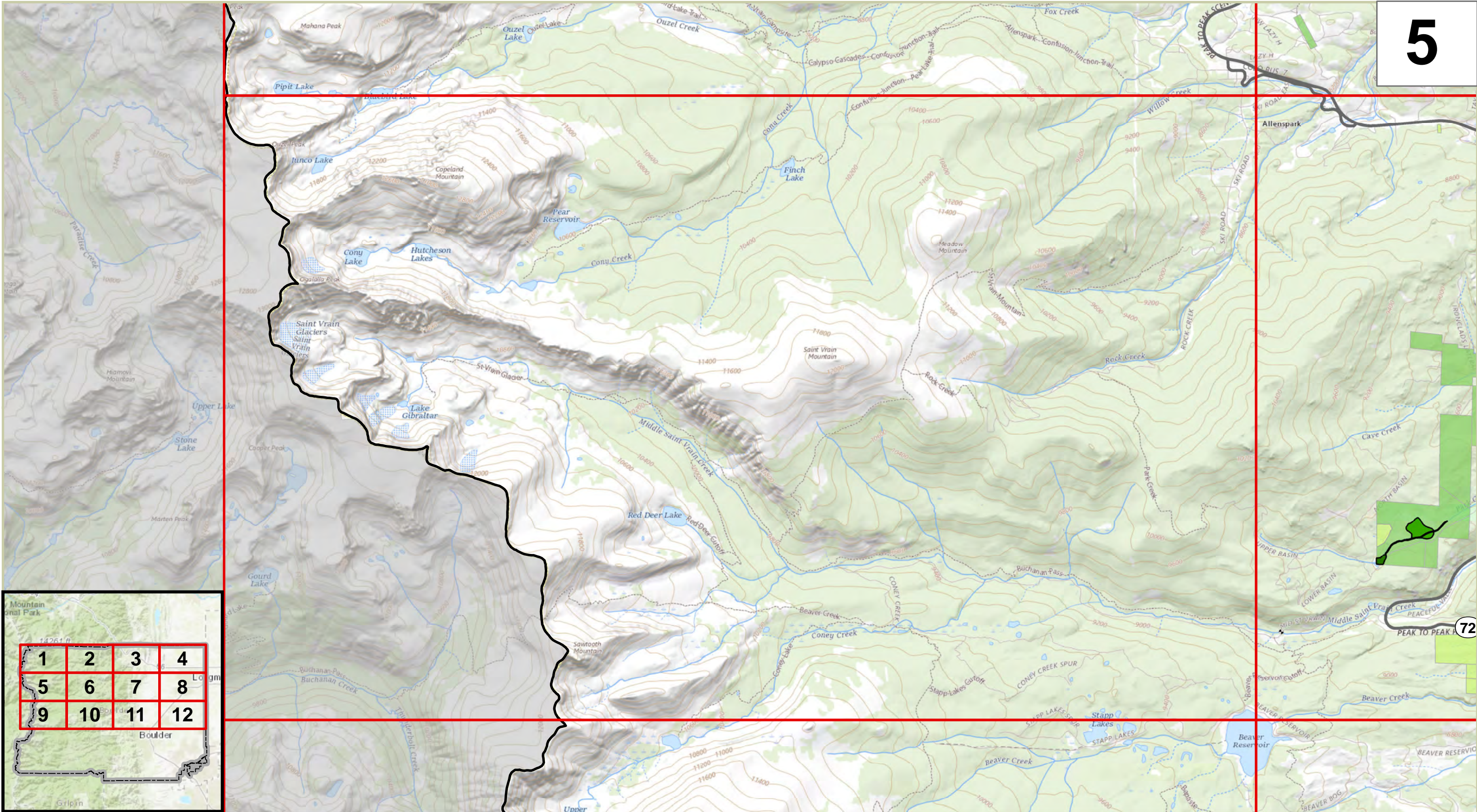
1	2	3	4
5	6	7	8
9	10	11	12

- BCPOS Properties
- Conservation Easements
- Highways
- 4WD Access Road
- 4WD Jeep Road
- Alkali Flat
- Emergent
- Forested or Shrub
- Other
- Stream or Ditch
- Pond



North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

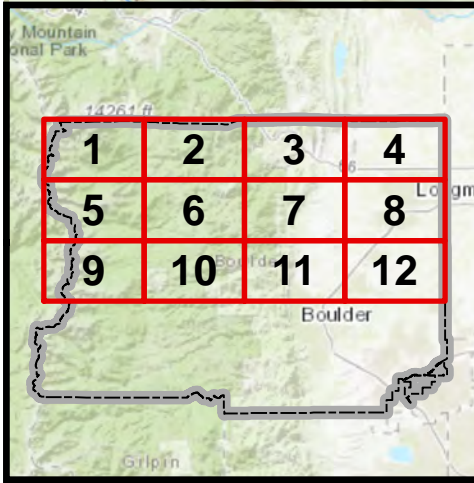
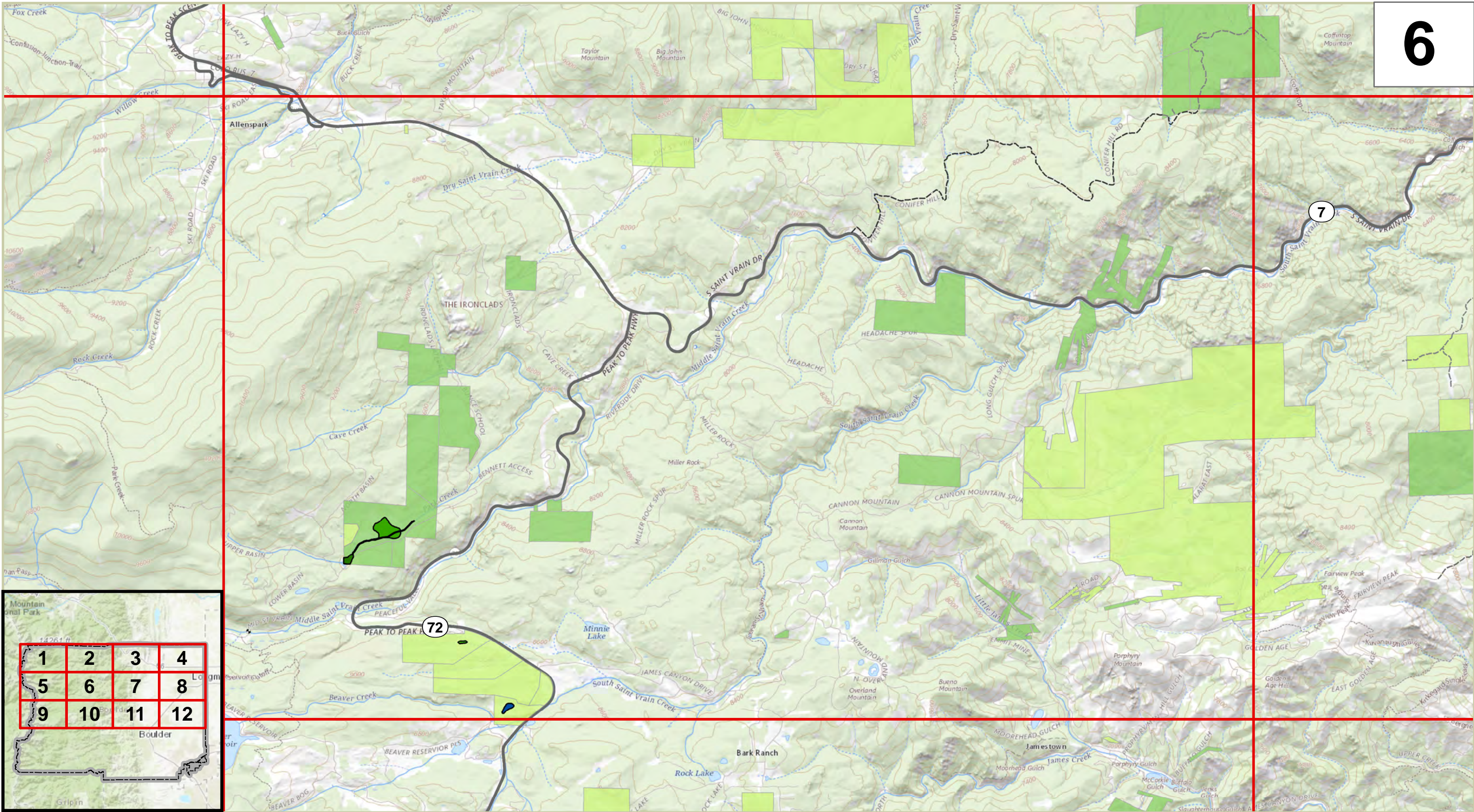
5



BCPOS Properties	Highways	4WD Access Road	Alkali Flat	Forested or Shrub	Stream or Ditch
Conservation Easements	4WD Jeep Road	Emergent	Other	Pond	

Miles

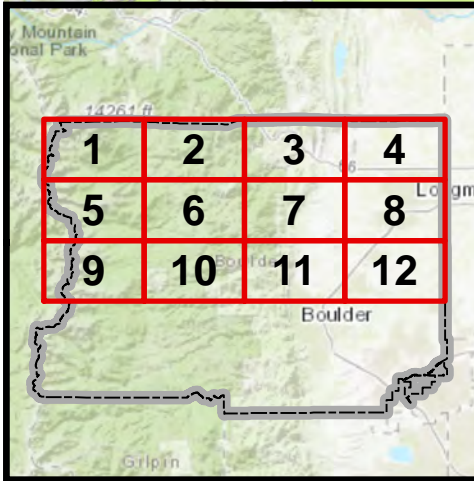
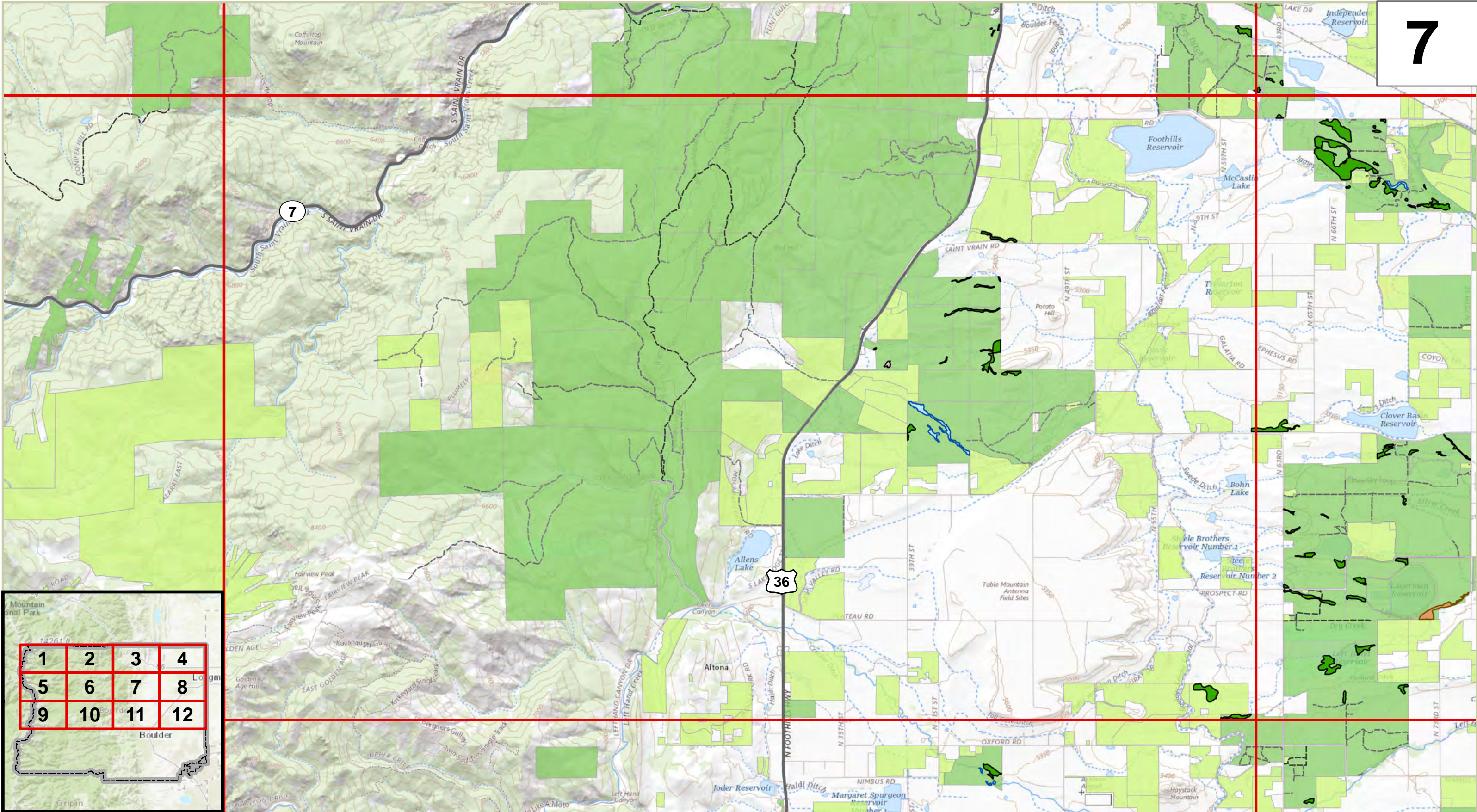
North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview



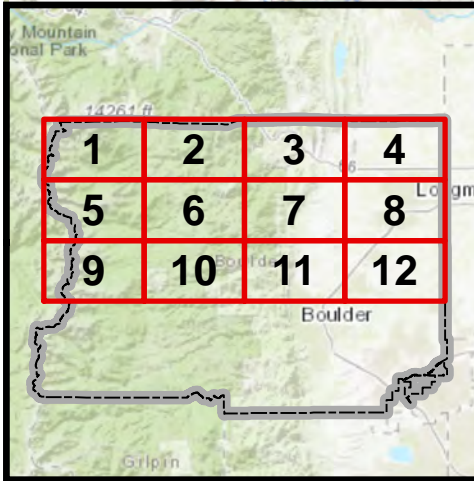
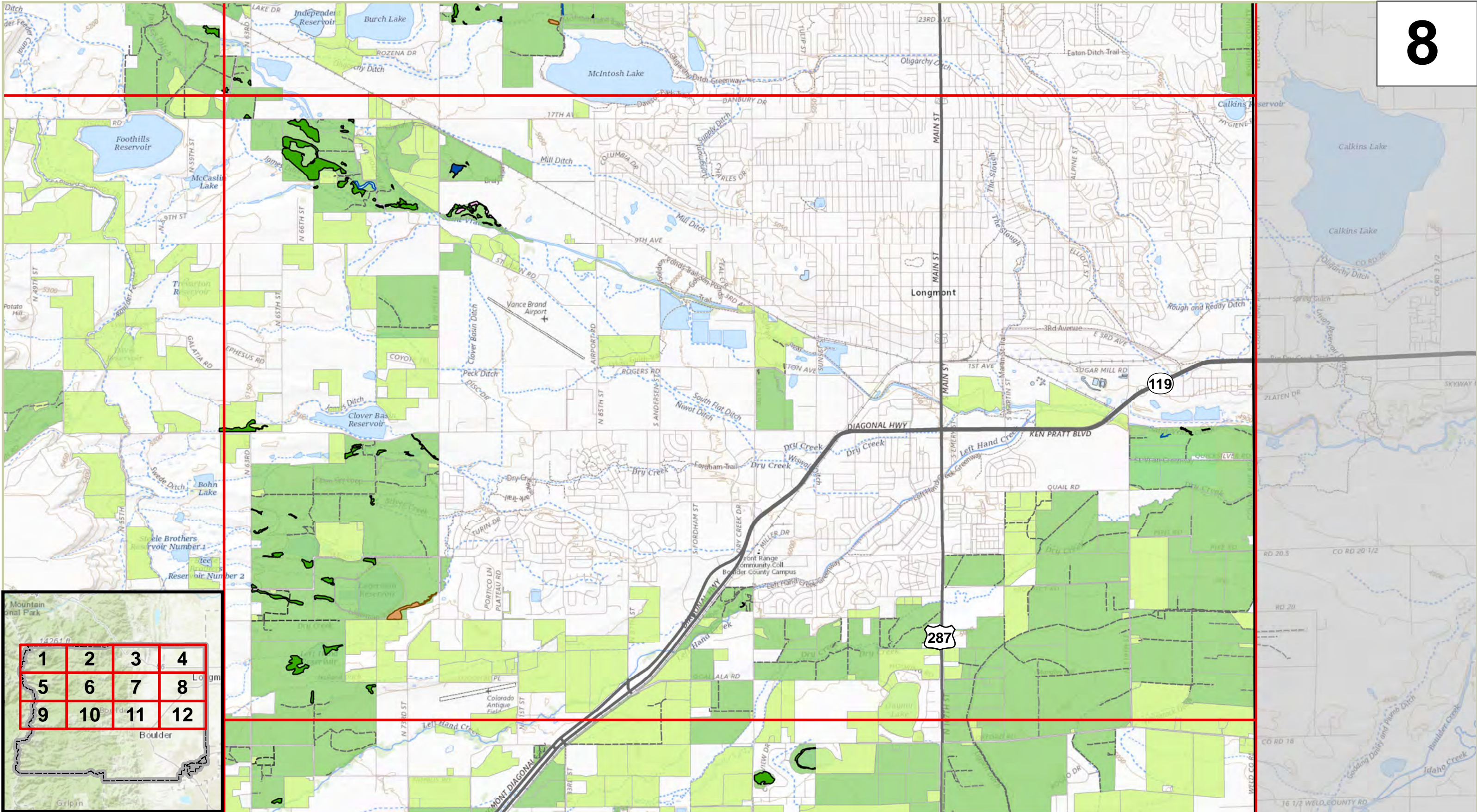
BCPOS Properties	Highways	4WD Access Road	Alkali Flat	Forested or Shrub	Stream or Ditch
Conservation Easements	4WD Jeep Road	Emergent	Other	Pond	0 0.5 1 Miles

North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

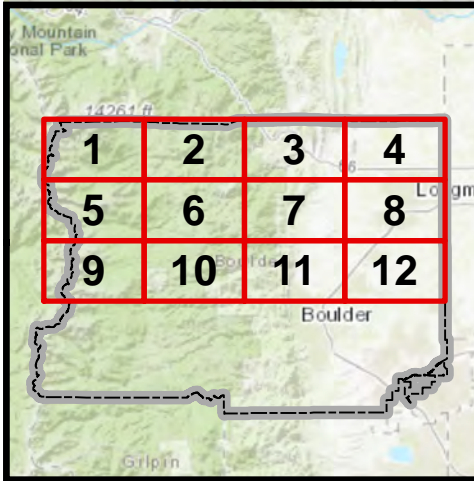
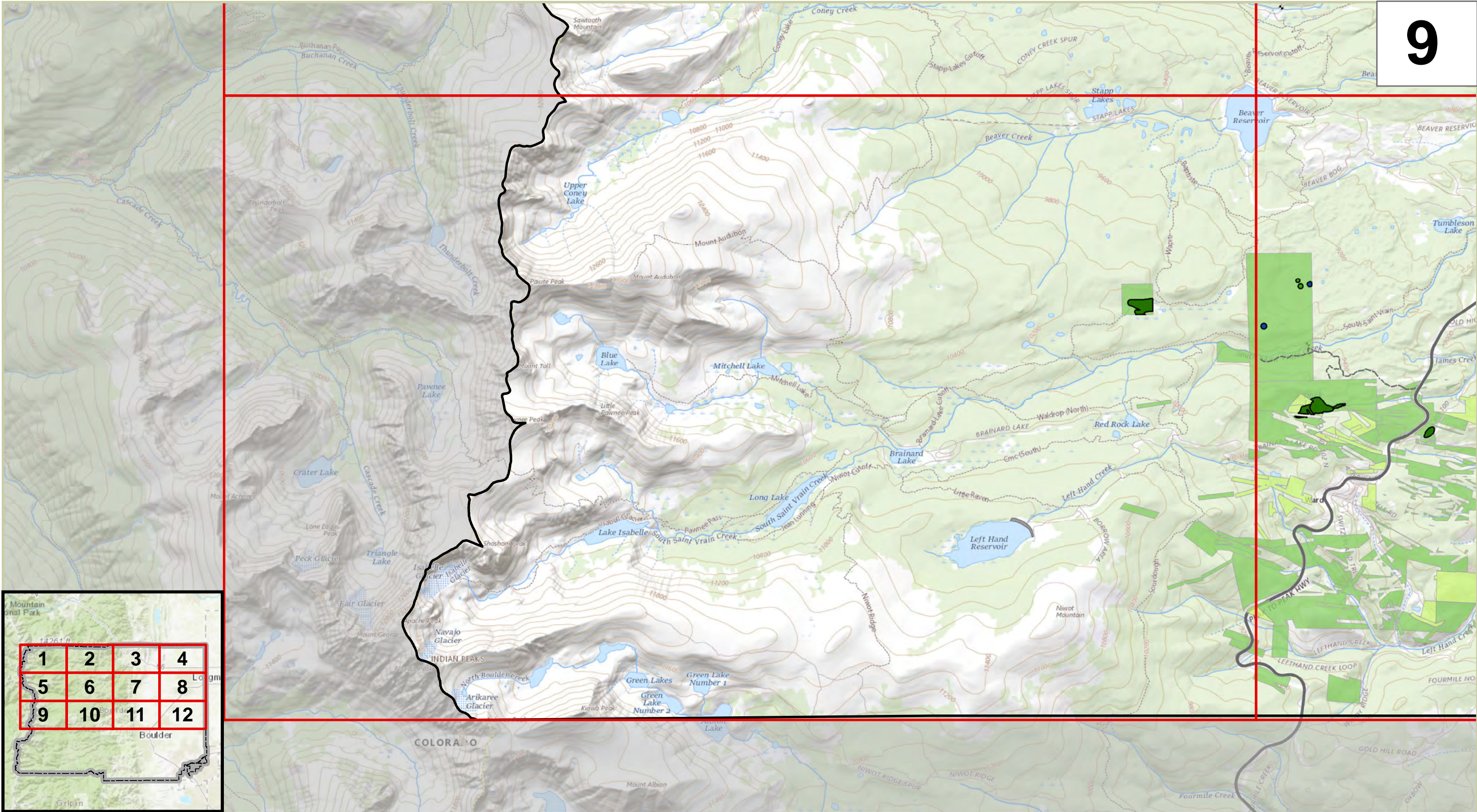
7



North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

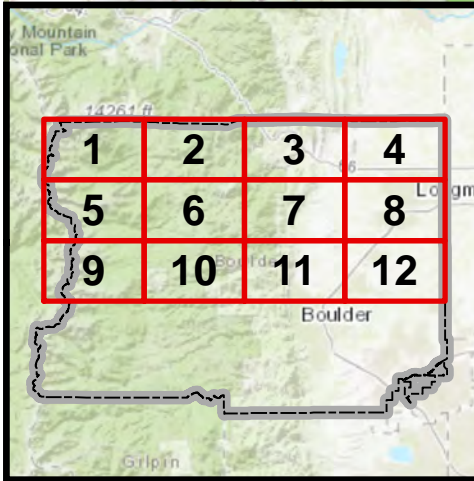
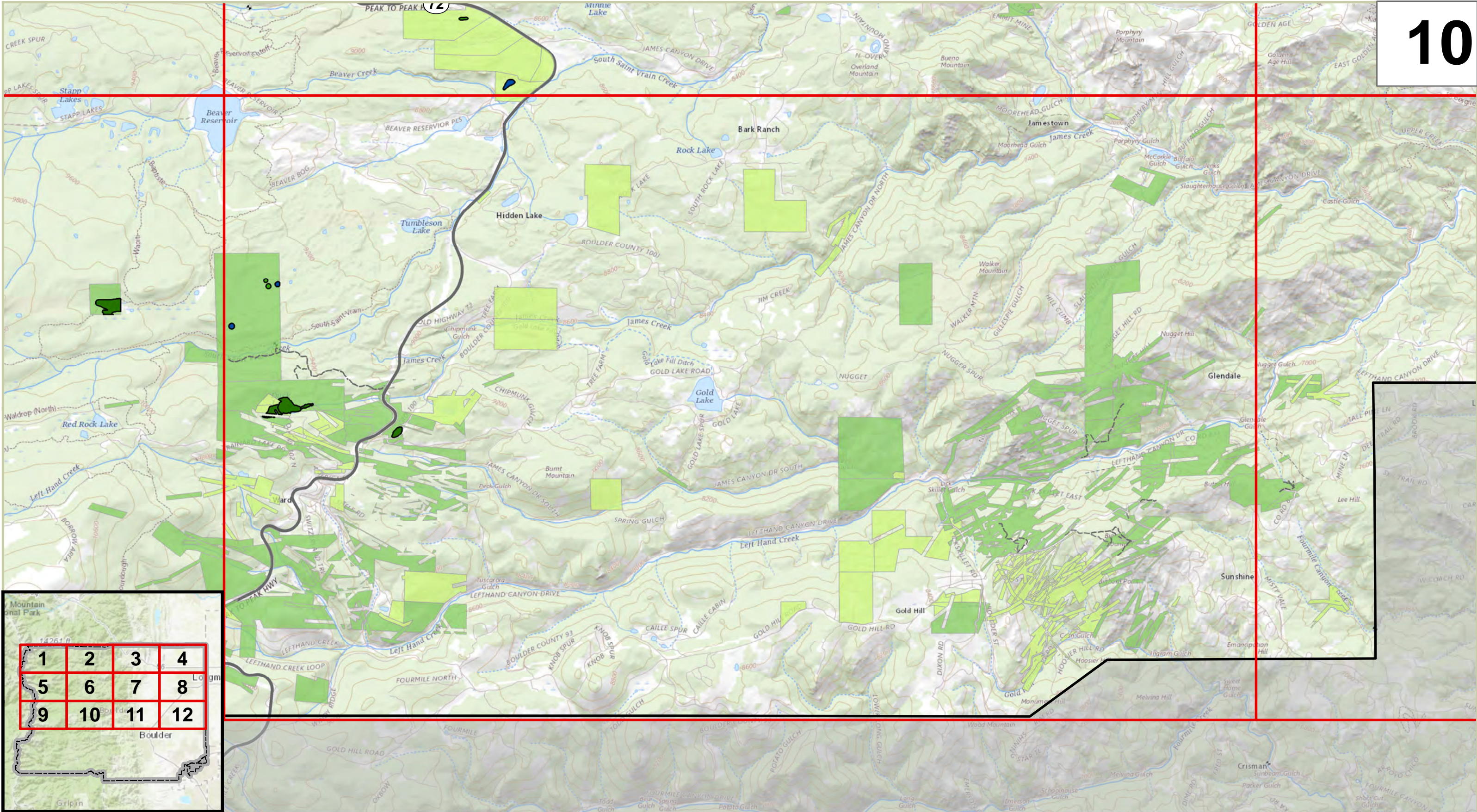


North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview



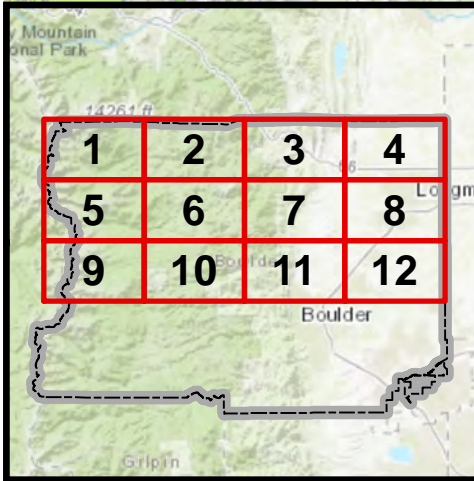
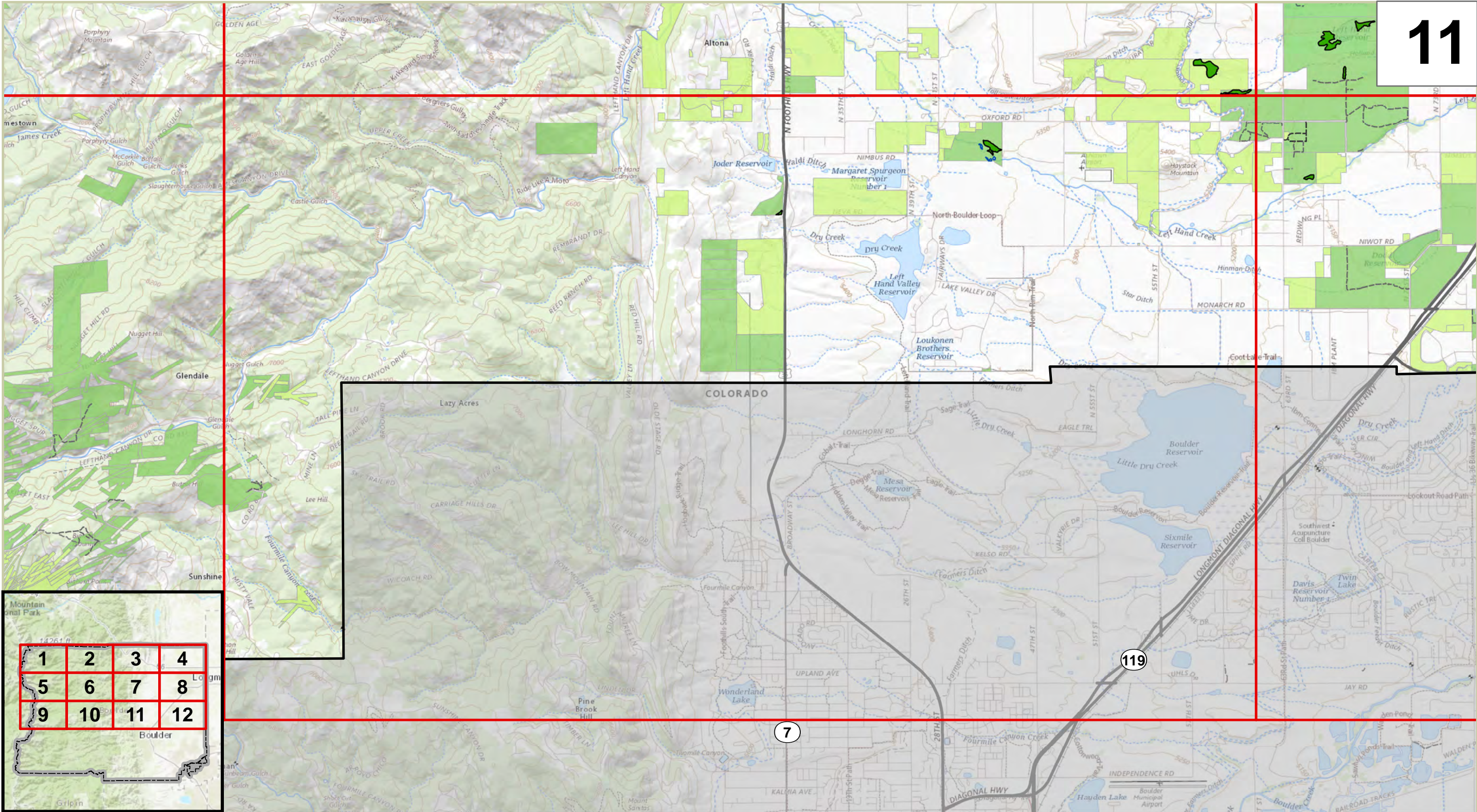
BCPOS Properties	Highways	4WD Access Road	Alkali Flat	Forested or Shrub	Stream or Ditch
Conservation Easements	4WD Jeep Road	Emergent	Other	Pond	

North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview



North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview

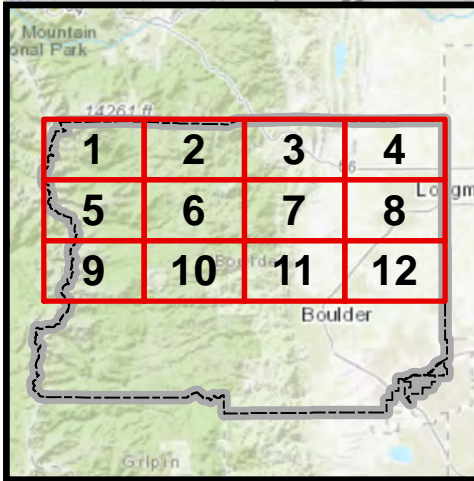
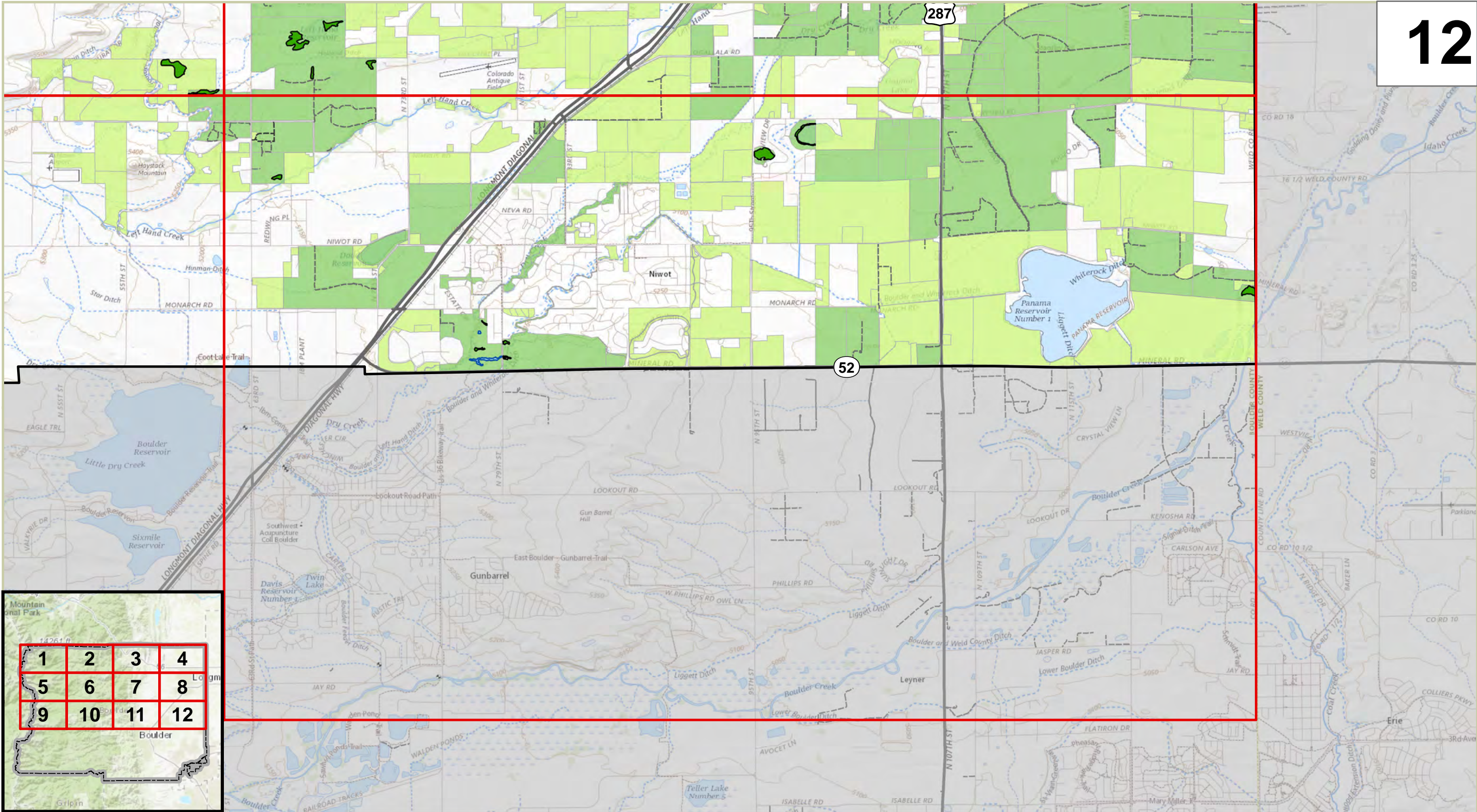
11



BCPOS Properties	Highways	4WD Access Road	Alkali Flat	Forested or Shrub	Stream or Ditch
Conservation Easements	4WD Jeep Road	Emergent	Other	Pond	

0 0.5 1 Miles

North Boulder County 2020 Wetland Inventory & Assessment: Baseline Layer Overview



Attachment C: 2020 BCPOS Wetland Inventory Summary Tables

Wetland Inventory Baseline Layer Summary – BCPOS Properties			
Source	Wetland Type	Count	Acres
Boulder County	Alkali Flat	9	11.4
Boulder County	Ditch	15	23.0
Boulder County	Perennial Stream	7	15.3
Boulder County	Marsh	15	13.9
Boulder County	Mixed	1	1.6
Boulder County	Pond	2	2.4
Boulder County	Shrub	2	1.4
Boulder County	Wet Meadow	33	98.6
CNHP	Freshwater Emergent	39	87.4
CNHP	Freshwater Forested / Shrub Wetland	3	19.4
CNHP	Freshwater Pond	4	15.6
WWE (1993)	Emergent	11	9.9
Total		141	299.9

*Note: Wetland type will be updated using Cowardin et al. 1979 classification system as per EIA protocol

Wetland Inventory Baseline Layer Size Summary – BCPOS Properties		
Wetland Size (Acres)	Count	Total (Acres)
0.1 – 0.5	54	15.1
0.5 – 1.0	20	13.2
1.0 – 1.5	12	14.3
1.5 – 2.0	13	22.4
2.0 – 5.0	28	83.8
5.0 – 10.0	8	59.1
10.0 – 20.0	5	56.6
20.0 – 50.0	1	35.4
Total	141	299.9

Wetland Inventory Baseline Property Summary – BCPOS Properties		
Property	Count	Acres
66 Investments	5	3.1
AHI	7	7.1
AHI Longmont Farms	1	4.9
Barron	4	3.0
Brinbaum	1	0.4
Bishop	1	1.2
BLM Exchange Ward	1	2.9
Braly	2	3.9
Brewbaker-Sorensson	4	4.8
Bullock	4	2.7

Cemex	6	19.2
Clark (John)	2	8.6
Cushman	5	11.8
Deberry	2	5.6
Dowe Flats	2	0.7
Duck Lake	2	11.6
Gage	11	56.2
Golden-Fredstrom	6	8.7
Hall Ranch	2	5.2
Hillcrest Heights	2	9.4
Hillside Estates	2	1.0
Hirschfeld	1	0.2
IMEL	5	17.1
Keyes	3	1.1
Lagerman	5	13.3
Leonard	1	1.7
Lohr	5	2.2
Loukonen Dairy Farm	7	15.3
Loukonen Outlots	3	0.6
Lutz	1	3.4
Monarch Park	4	3.9
Montgomery	3	0.8
Peck	1	0.2
Pella Crossing	5	9.2
Pierce	2	1.2
Platt	1	0.7
Prescott	3	19.0
Rabbit Mountain	6	3.6
Ramey	2	0.9
Sadar	1	0.6
Six Mile Fold	1	0.5
Suitts	4	5.7
Thompson (Dan)	1	1.9
Von Mende	1	11.5
Western Mobile	1	0.6
Wolf Run	3	13.2
Total Number of BCPOS Properties - 46		

Conservation Easement Summary Tables

Wetland Inventory Baseline Layer Summary – Conservation Easements			
Source	Wetland Type	Count	Acres
Boulder County	Digitized from Aerial Imagery	3	8.1
CNHP	Freshwater Emergent	6	369.0*
CNHP	Freshwater Forested/Shrub Wetland	6	31.8
CNHP	Freshwater Pond	1	2.4
Total		16	411.3*

*One wetland located on the Lillian Trevarton Conservation Easement property accounts for 332.5 acres of this total

Wetland Inventory Baseline Layer Size Summary – Conservation Easements		
Wetland Size (Acres)	Count	Total (Acres)
0.1 – 0.5	1	0.2
0.5 – 1.0	1	0.8
1.0 – 1.5	2	2.5
1.5 – 2.0	0	0
2.0 – 5.0	6	19.3
5.0 – 10.0	3	23.5
10.0 – 20.0	1	11.9
20.0 – 50.0	1	20.6
> 50.0	1	332.5
Total	16	411.3

Wetland Inventory Baseline Property Summary – Conservation Easements		
Property	Count	Acres
Bergen Family Farm Nupud	1	7.0
Camp St. Malo	2	8.8
Caribou Springs Ranch BCNA	1	3.0
Dannybrook Farm Nupud	1	7.9
Duck Lake	1	3.3
Lillian Trevarton	8	378.0
William Welch	2	3.2
Total Number of Conservation Easement Properties - 7		

Attachment D: Boulder County Metadata Standards

I. Introduction

Purpose

The purpose of this document is to define what metadata is, why it should be used, and to define Boulder County metadata standards and implementation. Compliance with these standards will facilitate data sharing, integration and compatibility among users of the Boulder County GIS System. Furthermore, it will help Boulder County maintain the value of the significant investment it has made to geospatial data. The objective of these standards is to provide guidelines that enable the creation of complete and consistent metadata for GIS data by Boulder County GIS users.

A. What are Metadata?

A metadata record is a file of information, usually presented as an XML document, which captures the basic characteristics of a data or information resource. It represents who, what, when, where, why and how of the resource. Geospatial metadata are used to document geographic digital resources such as Geographic Information System (GIS) files, geospatial databases, and imagery. A geospatial metadata record includes core library catalog elements such as Title, Abstract, and Publication Data; geographic elements such as Geographic Extent and Projection Information; and database elements such as Attribute Label Definitions and Attribute Domain Values (source: fgdc.gov).

B. Why use Metadata?

Metadata helps people who use geospatial data find the data they need and determine how best to use it. Metadata supports producers in locating and using their own data resources and data consumers in locating and using data resources produced by others. Metadata also supports:

Data Management requirements to:

- preserve the data history so that it can be re-used or adapted,
- assess the age and character of data holdings to determine which data should be maintained, updated, or deleted,
- instill data accountability by requiring a data steward to state what you know about the data and realizing what you don't, but should, know about your data
- limit data liability by explicitly designating the effective and administrative limits of use of the data.

Project Management requirements to:

- plan and document the data types and content needed to support the project
- monitor data development by regular review of the process steps completed and recorded within the metadata
- provide all project participants a common language of attributes and process methods and a place to record and share their progress
- access the lineage and content of outsourced data production by requiring robust metadata as a contract deliverable.

As personnel change in an organization, institutional knowledge leaves the organization. Undocumented data can lose their value. Subsequent workers may have little understanding of the contents and uses for a digital database and may find they can't trust results generated from these data. Also, lack of knowledge about other organizations' data can lead to duplication of effort. It may seem burdensome to add the cost of generating metadata to the cost of data collection, but in the long run metadata are worth it.

Source: fgdc.gov

II. Creation and Maintenance

1. Spatial Metadata

a. Must adhere to the International Organization for Standardization (ISO) 19139 Metadata Standard, and also include a Use Limitation.

b. Boulder County ArcGIS users should use the ArcGIS editor in ArcCatalog to create and maintain metadata. They should set their Metadata Style to “ISO 19139 Metadata Implementation Specification”, our standard style. In the ArcGIS editor, with this style set, there are three main sections, with multiple subsections, that encompass our required elements along with optional elements:

- i. Overview Section
 - a. Item Description
 - b. Topics and Keywords
 - c. Citation
 - d. Citation Contacts
 - e. Locales
- ii. Metadata Section
 - a. Details
 - b. Contacts
 - c. Maintenance

- d. Constraints
- iii. Resource Section
 - a. Details
 - b. Extents
 - c. Points of Contact
 - d. Maintenance
 - e. Constraints
 - f. Spatial Reference
 - g. Spatial Data Representation
 - h. Content
 - i. Quality
 - j. Lineage
 - k. Distribution
 - l. Fields
 - m. References
 - n. Geoprocessing History

c. A list of required metadata elements, each with a description or definition of the element, can be found in Appendix A – Required Metadata Entry Guide.

d. Submission of spatial metadata for import to our master SDE (REGIS1), must be in XML format. This is the Boulder County GIS standard.

2. Database Metadata

- a. Build database metadata into the data dictionary
- b. Coordinate system metadata must be submitted in an Excel spreadsheet

3. Cartography Metadata

- a. Single map metadata must be submitted as a text file, and should be present on the map itself.
- b. Map series metadata must be XML format.

4. Analysis Metadata

- a. Document purpose, resources, and methodology to edit or create analysis data
- b. Analysis metadata must be submitted in text document.

5. Document Imaging Metadata

- a. Document imaging metadata must be submitted in an Excel spreadsheet.

6. Application Metadata

- a. Document purpose, resources, and dependencies of application

b. Application metadata must be submitted as a text file.

7. Project Metadata

a. Project metadata must be submitted as a text file.

III. Submittal Requirements

See the appendix for a list of standard data that must be submitted for all spatial data.

IV. Specific Requirements

A. Boulder County GIS Spatial Data Standards

See Appendix A for required fields for spatial metadata.

B. Boulder County Database Standards

Metadata for databases will be built into the Database Dictionary. Additionally, coordinate system metadata is required for databases with coordinate information.

SPATIAL REFERENCE
COORDINATE SYSTEM
MAP PROJECTION
PLANAR COORDINATE INFORMATION
GEODETIC MODEL
DATA QUALITY INFORMATION
SOURCE INFORMATION
PROCESS STEP
ACCURACY

C. Boulder County Cartography Standards

The following pieces of information are recommended on individual maps:

ORIGINATOR
PUBLICATION DATE
TITLE
LOCATION
TIME PERIOD OF CONTENT
TIME PERIOD INFORMATION
CURRENTNESS REFERENCE

USE CONSTRAINTS
POINT OF CONTACT
POSITIONAL ACCURACY
LINEAGE
SOURCE INFORMATION
SOURCE SCALE DENOMINATOR
TYPE OF SOURCE MEDIA
SOURCE TIME PERIOD OF CONTENT

Maps published as part of a series may include additional information, such as:

UPDATE FREQUENCY
CROSS REFERENCE

D. Boulder County Analysis Standards

All required spatial metadata is required for analysis submittals. See APPENDIX A – Required Metadata Entry Guide, for a guide to each required field, including descriptions. The following special fields are also required. Entries may have either standardized responses or free form fields.

FINAL GIS DATA
DEFINITIONS AND USE OF DATASETS

E. Boulder County Project Standards

Submitted project documents (e.g. MXDs) should include the following information in a readme file.

LAYERS
FORMAT
VERSION
EXTENSIONS OR ADD-INS
PURPOSE
SYMBOLOLOGY

V. Reference Information

1. Metadata and ArcGIS; on-line virtual campus class
[Creating and Maintaining Metadata Using ArcGIS Desktop](#)
2. International Organization for Standards at
<http://www.iso.org/iso/home.html>

3. Federal Geographic Data Committee at <http://www.fgdc.gov/>
4. National Geophysical Data Center at
https://www.ngdc.noaa.gov/wiki/index.php?title=ISO_Metadata_Standard

Appendix A – Required Metadata Entry Guide

List of Required Fields Not Automatically Provided

This list is of metadata the user must enter. Required fields specified here are Boulder County policy as of June, 2013. ArcGIS automatically fills in many fields that are also required, and are not listed here. All other fields not listed here and not automatically filled in, are optional and should be filled out as necessary. The paths below are the categories to drill down through, in the ArcGIS editor, to enter or edit a particular field. The text below provides descriptions/explanations for the use of each required metadata field. These descriptions/explanations can also be seen at the bottom of the page, when you edit a field. Some entries have prescribed responses listed in a drop down box. Some have standard verbiage that is shown within quotes.

Boulder County users must adhere to the ISO 19139 Metadata Implementation Specification, which requires elements 1 through 6 below. Element 7 is not required by the ISO 19139 Metadata Implementation Specification, but is an additional element required by Boulder County.

1. Overview/Item Description/Description (Abstract) – A brief narrative summary of the resource’s content. In metadata standards this information is known as the abstract. ArcGIS Online refers to this information as the resource’s description. For geoprocessing tools, this information is referred to as the tool’s summary. Data type: Character String. From: ISO 19115.
2. Overview/Topics & Keywords/Topic Categories - Identifies the primary themes associated with the resource’s content. For example, if the resource describes soil conditions, the farming, geoscientific, and environment themes might all apply. This information is required if the spatial resource’s hierarchy level is “dataset”. Data type: MD_TopicCategoryCode. From: ISO 19115:2003. Nineteen categories are available.
3. Overview/Citation - At least one citation date.
 - a. Date Created - The date when the cited resource was created. Data Type: Date. From: ISO 19115:2003
 - b. Date Published – The date when the cited resource was published. Data Type: Date. From: ISO 19115:2003
 - c. Date Revised - The date when the cited resource was revised. Data Type: Date. From: ISO 19115:2003
4. Metadata/Contacts/Contact
 - a. At least one Contact Name which is the name of a person associated with the resource. The name of an individual, organization, or position must be provided. Data type: Character String. From: ISO 19115: 2003.
 - b. At least one Contact Role which identifies the association between the responsible party and the resource. Data type: CI_RoleCode. From: ISO 19115:2003. Contact Role has a drop down menu that lists the domain.

5. Resource/Distribution/Distribution Format/Format Version – The version of the transfer format, if appropriate; for example, a date or number. Data type: Character String. From: ISO 19115:2003.

As of the publication of this document, “10.2” is a valid entry for this field.

6. Resource/Fields/Details

- a. Entity Type Definition – A description of the features, objects, or cells contained by the dataset. Data type: Character String. From FGDC CSDGM.
- b. Entity Type Definition Source – The authority that provided the definition. Data type: Character String. From: FGDC CSDGM.
- c. Attribute Definition unless automatically generated – A description of the data contained by the field. Data type: Character String. From: FGDC CSDGM.
- d. Attribute Definition Source unless automatically generated – The authority that provided the definition. Data type: Character String. From: FGDC CSDGM.
- e. Domain - For each attribute that has a domain, you must fill in the domain type. There are 3 types of domains and whichever one you pick requires different information.

(1) Enumerated - If you pick the enumerated domain, you must input:

(a) Value – Describes one of the repeating values that may occur in the field. Coded values may be stored in the column to represent a repeating value to use less storage space. A text column should only be described as having an enumerated domain if there is a defined range of specific values that are possible. Data type: Character String. From FGDC CSDGM.

(b) Definition – A description of the value or code stored in this field. Data type: Character String. From: FGDC CSDGM.

(c) Definition Source - The authority that provided the description of the value. Data type: Character String. From: FGDC CSDGM.

(2) Range - If you pick the range domain, you must input:

(a) Minimum - For numeric columns, the least value that can be stored in the field. Data type: Character String. From: FGDC CSDGM.

(b) Maximum – The greatest value that can be stored in the field. Data type: Character String. From: FGDC CSDGM.

(3) Codeset - If you pick the codeset domain, you must input:

(a) Name – If the enumerated or coded values stored in the field are specified by an authority, provide the title for this set of values. Data type: Character String. From: FGDC CSDGM.

(b) Source – The authority that defined the set of values stored in this field. Data type: Character String. From: FGDC CSDGM.

7. Overview/Item Description/Use Limitation. – The Boulder County legal department has approved this use limitation:

“This data has been developed by Boulder County and may also include data from third-party sources. Boulder County makes no warranties, representations or guarantees, either expressed or implied, as to the completeness, accuracy or correctness of the data, nor accepts or assumes any liability arising from or for any incorrect, incomplete or misleading data provided pursuant to the use of this data. There are no warranties and/or representations, either expressed or implied, of merchantability or fitness of the data for a particular purpose or use.”

Using the ArcGIS Editor

The ArcGIS editor, when set to style “ISO 19139 Metadata Implementation Specification”, helps the user follow the ISO 19139 Metadata Standard. In the editor, along the left hand side, an **x** next to a subsection means there is at least one required element within that subsection that is missing. When a user clicks on that subsection, at least one message will appear at the top of the right hand side, preceded by **!**. These messages tell a user what elements needs to be entered.

This metadata style has rules about the elements that are required to create metadata that complies with our standards. If a metadata element has a red background, this indicates there is a problem with its value. A value may be mandatory in this metadata element with the current metadata style, but one hasn't been provided. Or, the wrong type of value may have been provided for the element. For example, if an element is supposed to contain an integer but instead a real number has been provided, the element's input control will have a red background.

Use Limitation, in the Overview Section, in the Item Description category, is required by Boulder County, not by ISO 19139. Therefore, there are no features that remind a user to enter the required information. That required information is shown in 7., above.



Attachment E: POS Metadata Standards (ISO19139 format)



These instructions are an add-on to Boulder County Metadata Standards, which can be found here:

<http://collaboration/sites/gisproject/Final Documents/Metadata Standards - 2014 Update.docx>

According to BOCO Standards, metadata must adhere to the International Organization for Standardization (ISO) 19139 standard. A few additional details are required by POS and/or BOCO, and are identified below. In this document, you can also find helpful shortcuts, tips, and explanations of metadata detail that initially seemed confusing to POS GIS Staff.

1. Filling in Attribute Domains

- **For fields that do not have a domain list:**
 - ✓ Fill in N/A under unrepresentable domain
- **For fields that do have a domain list and each value should be defined:**
 - ✓ Fill in each value with definition separately in enumerated domains.
 - ✓ Fill in name of domain list and the initials of who created it in codeset domains.
Example: Erosion control methods
- **For fields that do have a domain list and each value does not need to be defined:**
Either:
 - ✓ List values separated by comma in undescrivable domain.
Example: Yes, No or North, South, East, West
 - ✓ Fill in domain list and initials (or dates, etc.) of who created it (or helped create values?) in codeset domain
Example: Open Space property name list



If you have values in enumerated domains, then type something into Unrepresentable Domain, then delete ONE of the enumerated domains, ALL enumerated domains will delete together.

2. Models – these models were created by BCPOS GIS Staff to expedite the process of following BOCO/ISO19139 standards as you create your metadata. YOU MUST READ the model instructions before deciding to use it for your metadata.

They can be found here: G:\GIS\Documents\Metadata\Models

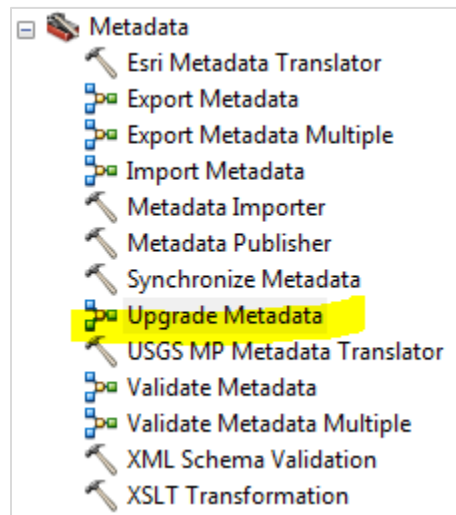
- **Starting From Scratch:**
 - ✓ V:\gispa\GIS_staff\AutomatedProcesses.tbx\New Metadata
- **Starting From Scratch Photo Table:**
 - ✓ V:\gispa\GIS_staff\AutomatedProcesses.tbx\New Photo Table Metadata
- **Delete Geoprocessing History only:**

V:\gispa\GIS_staff\AutomatedProcesses.tbx\Remove Geoprocessing History

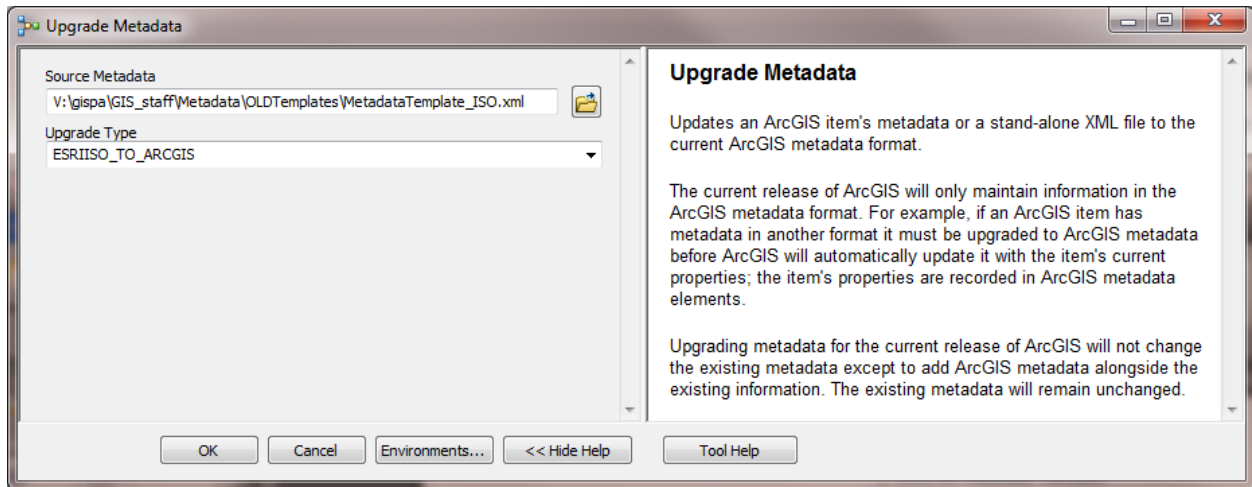
3. Other Rules of Thumb

- Delete existing geoprocessing history and disable future history from populating
 - ✓ If you would like to delete the geoprocessing history metadata, use the XSLT Transformation tool (Conversion\Metadata\XSLT Transformation). For the input XSLT field, use C:\Program Files (x86)\ArcGIS\Desktop10.2\Metadata\Stylesheets\gpTools\remove geoprocessing history.xslt. The resulting XML file can be saved back to the original item as its metadata using the Metadata Importer tool.
 - ✓ If you would like to stop adding geoprocessing information to metadata for each geoprocessing tool that runs on a file, disable that function by un-checking the “Log geoprocessing operations to a log file”, found in the Geoprocessing/Geoprocessing Options dialog box. In a Python script, logging of geoprocessing history can be disabled by including this statement: `arcpy.SetLogHistory(False)`.
- Use ArcCatalog as the catalog for data, to be reviewed by data collectors before collecting.
- Thumbnails are encouraged! If you make any edits to metadata after you have imported the thumbnail, it is possible that the thumbnail goes away and needs to be re-imported.
- To export a metadata template, use the XSLT Transformation Tool. Conversion>Metadata.

4. When to use Upgrade Metadata Tool

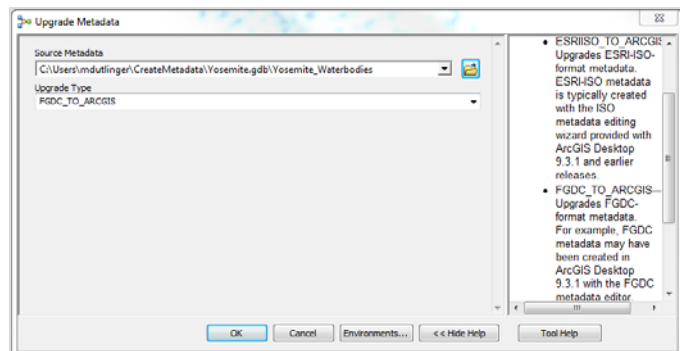
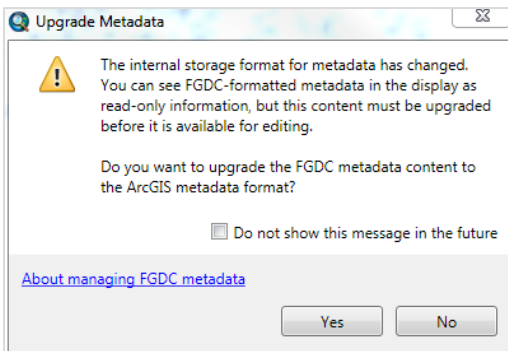


- **Changing software versions** (for example, ISO 19139 formatted metadata created in ArcGIS 10.1): If you do not upgrade your metadata, it will still be visible to you and your users but it will be read-only. Upgrading the metadata will add the new schema to your metadata but will not change or add new information. The old metadata will still be accessible in a read-only format, but you will be able to edit and create new metadata.
 - Example: *Kristi's MetadataTemplate_ISO.xml*



- **If you try to open metadata (item description) in another format** (for example, metadata created in FDGC format but style has since then changed to ISO19139):

A warning appears indicating that the metadata is in FGDC format—the underlying structure of the metadata is read-only at 10.x—and that the FGDC content must be upgraded to the ArcGIS metadata format. If the metadata schema is updated to the current format, the old metadata will still be associated with the feature class, but you will be able to add and edit metadata.










- Example: `V:\gispa\wildlife\WILDLIFE.gdb\elk\Elk`

5. When to Use Metadata Importer Tool

- Import Templates in `V:\gispa\GIS_Staff\Metadata`.
- You can create a stylesheet, for example, to update only contact information and not overwrite other stuff.
- This will bring in an exact copy of the metadata.
 - ✓ Good news: This means all customized info from the template, like contact info, use limitations, and attribute domain values will be filled in like they were in other metadata. It will only fill in attribute domain data for fields that are identical in the target data. It will not list attributes from the source metadata that are not present in the target metadata.
 - ✓ Bad news: This is also means you will need to tweak things to make it work for representing your new dataset, such as thumbnails, unique identifiers, etc.

Example: If you used Metadata Importer tool to import `PhotoTableTemplate_2014.xml`, you'd need to change the following specifics for the new photo table.

Description (Abstract)

B *I* U **A** **A**       

Photographs linked to Ag Flood Debris features.

Details: DA_AGflood_DebrisPhotos ✕

Label

Entity Type

Object	<input type="text" value="Table"/>
Count	<input type="text" value="67"/>
Definition	<input type="text" value="Related table to DA_AGflood_Debris features."/>
Definition Source	<input type="text" value="Meredith Dutlinger"/>

Attachment F: SAMPLE Contract

DETAILS SUMMARY	
Document Type	
OFS Number-Version	
County Contact Information	
Boulder County Legal Entity	Boulder County
Department	Parks & Open Space
Division/Program	
Mailing Address	Boulder County Parks and Open Space Department 5201 St. Vrain Road Longmont, CO 80503
Contract Contact	
Project Manager	
Invoice Contact	pospayables@bouldercounty.org
Contractor Contact Information	
Contractor Name	
Contractor Mailing Address	
Contact 1	
Contact email	
Contact 2	If, applicable
Contract Term	
Start Date	Date
Expiration Date	Date
Final End Date	Date
Contract Amount	
Contract Amount	
Fixed Price or Not-to-Exceed?	
Brief Description of Work	
Contract Documents	
Purchasing Details – County Internal Use Only	
Bid Number	
Award Date	
If no Bid No., bid process used	
Purchasing Notes <i>(optional)</i>	Informal:
Contract Notes	
<i>Additional information not included above</i>	

THIS CONTRACT ("Contract") is entered into by and between the Board of County Commissioners on behalf of the County of Boulder, State of Colorado, a body corporate and politic, for the benefit of the Parks and Open Space Department ("County") and [Supplier] ("Contractor"). County and Contractor are each a "Party," and collectively the "Parties."

In consideration of the mutual covenants contained in this Contract, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. Incorporation into Contract: The **Details Summary** is incorporated into this Contract. The **Contract Documents** are incorporated into this Contract by reference, except to the extent that the Proposal, if any is incorporated, contains any obligations placed upon County and not otherwise contained in this Contract.

2. Work to be Performed: Contractor will provide all labor and equipment and do all tasks necessary and incidental to performing the work as described in the **Details Summary** and **Contract Documents** (the "Work"). Contractor will perform the Work (a) in a good and workmanlike manner, (b) at its own cost and expense, (c) in accordance with recognized industry standards of care, skill and diligence for the type of work being performed, and (d) in strict accordance with the Contract. **Work shall not commence until the County has provided a NOTICE TO PROCEED to Contractor, which shall set forth the date that Contractor may begin the Work.**

3. Term of Contract: The **Contract Term** begins on the **Start Date** and expires on the Expiration Date. Notwithstanding, Work shall not commence until the County has provided a NOTICE TO PROCEED to Contractor, which shall set forth the date that Contractor may begin the Work. In no event shall Work be performed outside the **Contract Term**.

4. Payment for Work Performed: In consideration of the Work performed by Contractor, and subject to conditions contained in this Contract, County will pay an amount not to exceed the **Contract Amount** to Contractor in accordance with the **Contract Documents**.

5. Invoicing: Contractor will promptly provide a copy of its Form W-9 and invoice template to County upon request. Contractor must submit an invoice to the County by the fifteenth (15th) day of the month following completion of the Work. All invoices submitted require the following components: Contractor's name and address (submitted W-9 address must match remit address), detailed description of services, dates of services, itemization of labor and materials costs, "Bill to: Boulder County" language, payment remittance address, payer, name and address, date of invoice, unique invoice number, and total amount due. Contractor must send all completed invoices to the **Invoice Contact** in the **Details Summary**. Email delivery is preferred by the County; County may require delivery of invoices by email. Failure to submit invoices in a timely manner and in accordance with the terms of this Contract may cause a delay in payment. County may recoup any damages incurred because of Contractor's failure to submit invoices pursuant to the terms of this paragraph. County's acceptance or payment of an invoice will not constitute acceptance of any Work performed under this Contract.

6. Extra Time to Complete the Work: If Contractor cannot complete the Work by the **Expiration Date**, Contractor may request extra time to complete the Work. County, in its sole discretion, may grant Contractor additional time to complete the Work and, if so, will provide Contractor with written notice of the amount of extra time granted. County granting extra time to complete the Work will not entitle Contractor to additional compensation from County. This

Contract will remain in full force and effect during any time period that Contractor is permitted to finish completing the Work.

7. Extension of Contract Term (Additional Work): Upon mutual agreement of the Parties, this Contract may be extended until the **Final End Date**. During any extended **Contract Term**, the terms of this Contract will remain in full force and effect, unless otherwise amended in writing by the Parties. Where the Contractor will provide additional services for additional compensation beyond the initial **Contract Amount**, the Parties must execute a written amendment before the then-current **Expiration Date**. If necessary, the written amendment will incorporate an updated Scope of Work and updated Fee Schedule as exhibits. Contractor must provide a current Certificate of Insurance to the County that complies with the **Insurance Requirements** of this Contract, if any, prior to any extended **Contract Term**.

8. Schedule of Work: County may designate the hours (on a daily or weekly basis) during which Contractor can perform the Work, strictly for the purposes of minimizing inconvenience to the County and interference with County operations. Contractor will otherwise set its own work schedule.

9. Indemnity: Contractor will be liable for any damages to persons or property caused by or arising out of the actions, obligations, or omissions of Contractor, its employees, agents, representatives or other persons acting under Contractor's direction or control in performing or failing to perform the Work under this Contract. Contractor will indemnify and hold harmless County, its elected officials and appointed department heads, and its employees, agents and representatives (the "indemnified parties"), from any and all liability, claims, demands, actions, damages, losses, judgments, costs or expenses, including attorneys' fees, which may be made or brought or which may result against any of the indemnified parties as a result or on account of the actions or omissions of Contractor, its employees, agents or representatives, or other persons acting under Contractor's direction or control. This indemnification obligation will extend to claims based on Contractor's unauthorized use or disclosure of confidential information and intellectual property infringement. County will not be obligated to indemnify or defend Contractor under any circumstances. Contractor's obligations under this provision shall survive expiration or termination of this Contract. Nothing contained in this Contract or the **Contract Documents** is intended to limit or restrict the indemnification rights or obligations of any Party under this provision, or damages available for breaches of the obligations herein.

10. Nondiscrimination: Contractor will comply with the letter and spirit of the Colorado Anti-Discrimination Act, C.R.S. § 24-34-401, et seq., as amended, and all applicable local, State and Federal laws concerning discrimination and unfair employment practices. County prohibits unlawful discrimination on the basis of race, color, religion, gender, gender identity, national origin, age 40 and over, disability, socio-economic status, sexual orientation, genetic information, or any other status protected by applicable Federal, State or local law. Contractor must require that its subcontractors, if any, similarly comply with all applicable laws concerning discrimination and unfair employment practices.

11. Information and Reports: Contractor will provide to authorized County, State, and Federal government representatives all information and reports that may be required for any purpose authorized by law. Contractor will permit access to such representatives to Contractor's facilities, books, records, accounts, and any other relevant sources of information. Where information required by a representative is in the exclusive possession of a person or entity other than Contractor, Contractor must so certify to the County and explain what efforts it has made to obtain the information.

12. Independent Contractor: Contractor is an independent contractor for all purposes in performing the Work. Contractor is not an employee of the County for any purpose, including the Federal Insurance Contribution Act, the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, the Colorado Workers' Compensation Act, the Colorado Unemployment Insurance Act, and the Public Employees Retirement Association. Accordingly, County will not withhold or pay any income tax, payroll tax, or retirement contribution of any kind on behalf of Contractor or Contractor's employees. As an independent contractor, Contractor is responsible for employing and directing such personnel and agents as it requires to perform the Work. Contractor will exercise complete authority over its personnel and agents and will be fully responsible for their actions.

13. Termination for Non-Appropriation: The other provisions of this Contract notwithstanding, the County is prohibited by law from making commitments beyond the current fiscal year. Payment to Contractor beyond the current fiscal year is contingent on the appropriation and continuing availability of funding in any subsequent year. County has reason to believe that sufficient funds will be available for the full **Contract Term**. Where, however, funds are not allocated for any fiscal period beyond the current fiscal year, County may terminate this Contract without penalty by providing seven (7) days' written notice to Contractor.

14. Termination for Breach: Either Party's failure to perform any of its material obligations under this Contract, in whole or in part or in a timely or satisfactory manner, will be a breach. The institution of proceedings under any bankruptcy, insolvency, reorganization or similar law, by or against Contractor, or the appointment of a receiver or similar officer for Contractor or any of its property, which is not vacated or fully stayed within thirty (30) days after the institution of such proceeding, will also constitute a breach. In the event of a breach, the non-breaching Party may provide written notice of the breach to the other Party. If the notified Party does not cure the breach, at its sole expense, within thirty (30) days after delivery of notice, the non-breaching Party may exercise any of its remedies provided under this Contract or at law, including immediate termination of this Contract.

15. Termination for Convenience: County may terminate this Contract, in whole or in part, for any reason, upon seven (7) days' advance written notice to Contractor.

16. Remedies for Non-Performance: If Contractor fails to perform any of its obligations under this Contract, County may, at its sole discretion, exercise one or more of the following remedies, which shall survive expiration or termination of this Contract:

a. Suspend Performance: County may require that Contractor suspend performance of all or any portion of the Work pending necessary corrective action specified by the County and without entitling Contractor to an increase in compensation or extension of the performance schedule. Contractor must promptly stop performance and incurring costs upon delivery of a notice of suspension by the County.

b. Withhold Payment Pending Corrections: County may permit Contractor to correct any rejected Work at the County's discretion. Upon County's request, Contractor must correct rejected work at Contractor's sole expense within the time frame established by the County. Upon completion of the corrections satisfactory to the County, County will remit payment to Contractor.

c. Deny Payment: County may deny payment for any Work that does not comply with the requirements of the Contract or that Contractor otherwise fails to provide or complete, as

determined by the County in its sole discretion. Upon County request, Contractor will promptly refund any amounts prepaid by the County with respect to such non-compliant Work.

d. Removal: Upon County 's request, Contractor will remove any of its employees or agents from performance of the Work, if County, in its sole discretion, deems any such person to be incompetent, careless, unsuitable, or otherwise unacceptable.

17. Binding Arbitration Prohibited: County does not agree to binding arbitration by any extra-judicial body or person.

18. Conflicts of Interest: Contractor must not engage in any business or personal activities or practices or maintain any relationships that conflict in any way with the full performance of Contractor's obligations.

19. Notices: All notices provided under this Contract must be in writing and sent by Certified U.S. Mail (Return Receipt Requested), electronic mail, or hand-delivery to the other Party's **Contact** at the address specified in the **Details Summary**. For certified mailings, notice periods will begin to run on the day after the postmarked date of mailing. For electronic mail or hand-delivery, notice periods will begin to run on the date of delivery.

20. Statutory Requirements: This Contract is subject to all statutory requirements that are or may become applicable to counties or political subdivisions of the State of Colorado generally, including but not limited to: C.R.S. § 38-26-107, which requires withholding funds where the County receives a claim for payment from a supplier or subcontractor of Contractor upon notice of final settlement (required for public works contracts that exceed \$150,000); C.R.S. § 8-17-101 et seq.; C.R.S. § 18-8-301, et seq.; and C.R.S. § 18-8-401, et seq.

21. Public Contracts for Services (C.R.S. §§ 8-17.5-101, et seq.): Contractor hereby certifies, warrants, and agrees that it does not knowingly employ or contract with an illegal alien who will perform work under this Contract and further certifies that it will confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Contract by participating in the E-Verify Program established under Pub. L. 104-28 or the department verification program established under C.R.S. § 8-17.5-102(5)(c). Contractor (i) shall not knowingly employ or contract with an illegal alien to perform work under this Contract; (ii) shall not enter into a contract with a subcontractor that fails to certify to the contractor that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Contract; (iii) has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Contract through participation in the E-Verify program or department program; (iv) is prohibited from using either the E-Verify program or department program procedures to undertake preemployment screening of job applicants while this Contract is being performed; and (v) shall comply with any reasonable request by the department made in the course of an investigation that the Colorado Department of Labor and Employment is undertaking pursuant to the authority established in C.R.S. § 8-17.5-102(5). If Contractor obtains actual knowledge that a subcontractor performing work under this Contract knowingly employs or contracts with an illegal alien, Contractor shall (a) notify the subcontractor and County within three (3) days that Contractor has actual knowledge that subcontractor is employing or contracting with an illegal alien; and (b) terminate the subcontract if, within three (3) days of receiving notice hereunder, subcontractor does not stop employing or contracting with the illegal alien; except that Contractor shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien. Contractor's violation of this provision will constitute

a material breach of this Contract, entitling the County to terminate the contract for breach. If this Contract is so terminated, Contractor shall be liable for actual and consequential damages to the County.

22. Entire Agreement/Binding Effect/Amendments: This Contract represents the complete agreement between the Parties and is fully binding upon them and their successors, heirs, and assigns, if any. This Contract terminates any prior agreements, whether written or oral in whole or in part, between the Parties relating to the Work. This Contract may be amended only by a written agreement signed by both Parties.

23. Assignment/Subcontractors: This Contract may not be assigned or subcontracted by Contractor without the prior written consent of the County. If Contractor subcontracts any of its obligations under this Contract, Contractor will remain liable to the County for those obligations and will also be responsible for subcontractor's performance under, and compliance with, this Contract.

24. Governing Law/Venue: The laws of the State of Colorado govern the construction, interpretation, performance, and enforcement of this Contract. Any claim relating to this Contract or breach thereof may only be brought exclusively in the Courts of the 20th Judicial District of the State of Colorado and the applicable Colorado Appellate Courts.

25. Breach: The failure of either Party to exercise any of its rights under this Contract will not be deemed to be a waiver of such rights or a waiver of any breach of the Contract. All remedies available to a Party in this Contract are cumulative and in addition to every other remedy provided by law.

26. Severability: If any provision of this Contract becomes inoperable for any reason but the fundamental terms and conditions continue to be legal and enforceable, then the remainder of the Contract will continue to be operative and binding on the Parties.

27. Third-Party Beneficiary: Enforcement of the terms and conditions and all rights and obligations of this Contract are reserved to the Parties. Any other person receiving services or benefits under this Contract is an incidental beneficiary only and has no rights under this Contract. Notwithstanding, where the beneficiary **Department** is led by an Elected Official, such Elected Official shall be considered a third-party beneficiary.

28. Colorado Open Records Act: County may disclose any records that are subject to public release under the Colorado Open Records Act, C.R.S. § 24-72-101, et seq.

29. Conflict of Provisions: If there is any conflict between the terms of the main body of this Contract and the terms of any of the **Contract Documents**, the terms of the main body of the Contract will control.

30. Governmental Immunity: Nothing in this Contract shall be construed in any way to be a waiver of the County's immunity protection under the Colorado Governmental Immunity Act, C.R.S. § 24-10-101, et seq., as amended.

31. Representations and Warranties: Contractor represents and warrants the following:

- a. Execution of this Contract and performance thereof is within Contractor's duly authorized powers.
- b. The individual executing this Contract is authorized to do so by Contractor.

c. Contractor is authorized to do business in the State of Colorado and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the Work and the Contractor; and

d. Contractor and its subcontractors, if any, are financially solvent, able to pay all debts as they mature, and have sufficient working capital to complete the Work and perform all obligations under the Contract.

32. Legal Compliance: Contractor assumes full responsibility for obtaining and maintaining any permits and licenses required to perform the Work. Contractor's performance under this Contract and the Work itself will comply with all Federal, State, and local laws, regulations, ordinances and codes.

33. Litigation Reporting: Contractor is not currently involved in any action before a court or other administrative decision-making body that could affect Contractor's ability to perform the Work. Contractor will promptly notify the County if Contractor is served with a pleading or other document in connection with any such action.

34. Tax Exemption: County is exempt from payment of Federal, State, and local government taxes. Contractor shall collect no tax from the County, and the County shall not be liable to pay any taxes imposed on Contractor. County shall provide its tax exemption status information to Contractor upon request.

35. Delegation of Authority: The Parties acknowledge that the Board of County Commissioners has delegated authority to the Department Head or Elected Official that leads the beneficiary **Department** and their designees to act on behalf of the County under the terms of this Contract, including but not limited to the authority to terminate this Contract.

36. Ownership of Work Product: All work product, property, data, documentation, information or materials conceived, discovered, developed or created by Contractor pursuant to this Contract ("Work Product") will be owned exclusively by the County. To the extent possible, any Work Product will be deemed to be a work made for hire. Contractor unconditionally and irrevocably transfers and assigns to the County all right, title and interest in and to any Work Product.

37. Publicity Releases: Contractor will not refer to this Contract or the County in commercial advertising without prior written consent of the County. This provision shall survive expiration or termination of this Contract.

38. Execution by Counterparts; Electronic Signatures: This Contract may be executed in multiple counterparts, each of which will be deemed an original, but all of which will constitute one agreement. The Parties approve the use of electronic signatures, governed by the Uniform Electronic Transactions Act, C.R.S. §§ 24 71.3 101 to 121. The Parties will not deny the legal effect or enforceability of this Contract solely because it is in electronic form or because an electronic record was used in its creation. The Parties will not object to the admissibility of this Contract in the form of electronic record, or paper copy of an electronic document, or paper copy of a document bearing an electronic signature, because it is not in its original form or is not an original.

39. Limitation on Public Statements and Lobbying Activity: During the term of this Contract, Contractor may receive from the County its confidential data, work product, or other privileged or confidential information that is protected by law. To maintain the fact and appearance of absolute objectivity, Contractor shall not, without the prior written consent of the County, which shall not

be unreasonably withheld, do any of the following: (a) disclose information obtained because of this contractual relationship to any third party; (b) lobby any State or Federal agency on any pending matter while this Contract is effective; or (c) make any public statements or appear at any time to give testimony at any public meeting on the subject matters regarding which Contractor is or was retained by the County. County may set reasonable conditions on any disclosure authorized by the County under this provision. Notwithstanding, Contractor may make disclosures as required by law, and to law enforcement officials in connection with any criminal justice investigation.

40. **Sustainability**: County encourages Contractor to consider the procurement and use of environmentally preferable products and services while performing services under this Contract. “Environmentally preferable purchasing” means making purchasing choices for products and services that have a lesser or reduced adverse effect on human health and the environment when compared with competing products and services that serve the same purpose. Environmentally preferable purchasing is consistent with the County’s commitment to protecting our air, water, soil, and climate for current and future generations. County encourages Contractor to incorporate the following actions into Contractor’s performance of the Work: environmentally preferable supplies and services; conservation of water; efficient energy use; waste prevention; reuse and recycle construction and de-construction materials in a manner that maximizes reuse of materials; sustainable transportation choices, including consideration to business communication software such as Skype alternative to air travel and public transit or carpooling for in-person meetings; pollution prevention; low toxicity for public health & safety; and reduced emissions to address climate change.

41. **Limitation of Liability**: COUNTY SHALL NOT BE LIABLE TO CONTRACTOR FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO THIS CONTRACT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. COUNTY’S AGGREGATE LIABILITY, IF ANY, ARISING FROM OR RELATED TO THIS CONTRACT, WHETHER IN CONTRACT, OR IN TORT, OR OTHERWISE, IS LIMITED TO, AND SHALL NOT EXCEED, THE AMOUNTS PAID OR PAYABLE HEREUNDER BY COUNTY TO CONTRACTOR. ANY CONTRACTUAL LANGUAGE LIMITING CONTRACTOR’S LIABILITY SHALL BE VOID.

42. **Insurance Requirements**: Prior to commencing the Work, Contractor will provide a Certificate of Insurance to the County demonstrating adequate insurance coverage as required by this paragraph. All policies evidencing coverage required by the Contract will be issued by insurance companies satisfactory to the County. Contractor will forward Certificates of Insurance directly to the **County Department** and **Contact** listed in the **Details Summary**.

a. For the entire duration of this Contract including any extended or renewed terms, and longer as may be required by this Contract, Contractor shall procure and maintain at its own expense, and without cost to the County, the following kinds and minimum amounts of insurance to insure the liability risks that Contractor has assumed under this Contract:

i. **Commercial General Liability**

This coverage should be provided on an Occurrence Form, ISO CG001 or equivalent, with Minimum limits of \$1,000,000 Each Occurrence, \$2,000,000 General Aggregate and \$2,000,000 Products Completed Operations Aggregate.

ii. **Automobile Liability**

Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of the Contract. Minimum limits \$1,000,000 Each Accident.

iii. **Workers' Compensation and Employer's Liability**

Workers' Compensation must be maintained with the statutory limits. Employer's Liability is required for minimum limits of \$100,000 Each Accident/\$500,000 Disease-Policy Limit/\$100,000 Disease-Each Employee.

b. **Boulder County as Additional Insured:** Boulder County shall be named as an additional insured for General Liability, Umbrella/Excess Liability, and Pollution Liability, as designated in this Contract. Additional insured shall be endorsed to the policy.

THE ADDITIONAL INSURED WORDING SHOULD BE AS FOLLOWS: *County of Boulder, State of Colorado, a body corporate and politic, is named as Additional Insured.*

c. **Notice of Cancellation:** Each insurance policy required by this Contract shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days' prior written notice has been given to the County except when cancellation is for non-payment of premium, then ten (10) days' prior notice may be given. If any insurance company refuses to provide the required notice, Contractor or its insurance broker shall notify the County any cancellation, suspension, or nonrenewal of any insurance policy within seven (7) days of receipt of insurers' notification to that effect.

d. **Insurance Obligations of County:** County is not required to maintain or procure any insurance coverage beyond the coverage maintained by the County in its standard course of business. Any insurance obligations placed on the County in any of the **Contract Documents** shall be null and void.

e. **Deductible:** Any and all deductibles contained in any insurance policy shall be assumed by and at the sole risk of Contractor.

f. **Primacy of Coverage:** Coverage required of Contractor and its subcontractors, if any, shall be primary over any insurance or self-insurance program carried by the County.

g. **Subrogation Waiver:** All insurance policies in any way related to this Contract secured or maintained by Contractor as required herein shall include clauses stating that each carrier shall waive all rights of recovery, under subrogation or otherwise, against County, its organizations, officers, agents, employees, and volunteers.

43. **Payable Costs in the Event of Termination:** As set forth herein, the County reserves the right to terminate this Contract at any time for either breach or convenience. In the event that the County terminates the Contract before its expiration, Contractor shall be entitled to receive payment only for Work satisfactory executed and actual costs incurred prior to delivery of the notice to terminate.

[Signature Page to Follow]

IN WITNESS WHEREOF, the Parties have executed and entered into this Contract as of the latter day and year indicated below.

SIGNED for and on behalf of Boulder County	SIGNED for and on behalf of Contractor
Signature: SAMPLE	Signature: SAMPLE
Name:	Name:
Title:	Title:
Date:	Date:
↓↓ <i>For Board-signed documents only</i> ↓↓	
Attest:	<i>Initials</i>
Attestor Name: SAMPLE	
Attestor Title:	