

EQUINOX ENGINEERING
Wetland Environmental Consulting and Civil Engineering

STATEMENT OF QUALIFICATIONS FOR ENVIRONMENTAL & ENGINEERING SERVICES



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1.0 COMPANY PROFILE

Equinox Engineering & Environmental (Equinox) is pleased to submit this statement of qualifications (SOQ) to provide professional engineering services. The Equinox team has the capability, understanding, and necessary tools available to provide excellent, timely, appropriate, and quality technical services. Equinox has and is prepared to assist clients in both the public and private sectors at any level required, and can provide services from initial site assessment and due diligence studies through design and construction management. Equinox Engineering has an in-depth understanding of the concepts and applications needed to provide comprehensive engineering services that will result in a successful completion of your project.

Equinox is a registered small business listed on the Federal SAM database (DUNS # 831610964, CAGE CODE 5XEF7) and has been providing quality environmental consulting services since 2007. Equinox specializes in providing environmental engineering support with a licensed registered civil engineer for remedial designs, wetlands restoration, enhancement and/or creation, survey services, mitigation evaluation and planning, permitting support including working with the Army Corps of Engineers and other regulatory agencies, creation of maps and exhibits, public outreach, construction plan and specifications creation, project cost estimates, construction observation and oversight, wetland survey, wetland design, wetland permitting (Local, State and Federal including Army Corps of Engineers), wetland easements, wetland delineations, wetland constructing, and riparian corridor and stream restorations. Additionally, Equinox staff has prior project experience working with private and public entities including federal, state, county, and city governments; and Special Service Districts as well as different non-Profit organizations specializing in wetlands. These include Ducks Unlimited and The Nature Conservancy. This experience has allowed Equinox to understand the methodology to undertaking and completing environmental wetland projects in locations where water and wetlands are at a premium.

Equinox Engineering can provide personnel for your project that have over 25 years of construction related experience and more than 16 years of engineering design knowledge. This means that Equinox Engineering can provide quality and professional services with integrity and accountability. Equinox Engineering provides planning services with a comprehensive approach to land use and engineering services with technically sound and cost-effective solutions. Serving public agencies, private landowners and non-profit organizations, Equinox Engineering is continuing to grow and build upon the solid foundation of reliability, accuracy, cost effective solutions and timely performance. Equinox Engineering offers the services and solutions associated with a Licensed Professional Engineer as the company owner.

Equinox Engineering prides itself in its ability to complete projects with set constraints, on time and within budget. This is accomplished by implementing a streamlined design and review process and dedicating the resources of a Licensed Professional Engineer to each project. Furthermore, Equinox Engineering will continue to deliver on its commitment to provide cost effective and timely solutions to clients by providing the services that are achieved by listening to and understanding your input then conducting meticulous field reviews to gain a solid understanding of the existing conditions and by designing creative solutions that are cost effective.

Equinox Engineering is an established business based in the Salt Lake City, Utah, metro area with an office in Vancouver, Washington.

2.0 PROJECT APPROACH

As part of Equinox Engineering's commitment to deliver project satisfaction we will provide a comprehensive 7 Step project development process to complete complex projects. This begins with the initial project assessment.

STEP 1 – INITIAL PROJECT ASSESSMENT

Client and Equinox Engineering will discuss the project as needed to allow Equinox Engineering to provide a scope of services. For complex projects involving design, a site visit may be conducted to observe the project location first hand. After this meeting and/or site visit Equinox Engineering will submit a detailed engineering services proposal outlining services to be provided, associated costs and any conditional understandings associated with the project. This step will be completed when the proposal is accepted and a contractual agreement is entered into by the Client and Equinox Engineering.

STEP 2 – “KICK OFF” MEETING

Client and Equinox Engineering will discuss the project in detail and develop a succinct direction early on. This step will be completed when a clear understanding of the project is arrived at allowing detailed and specific information gathering to begin.

STEP 3 – INFORMATION GATHERING

Comprehensive field reviews and/or reconnaissance activities, including but not limited to the following:

- Research and review of any found As-Built drawing(s).
- Research for and review of any found previous studies and/or evaluations.
- Records search of any pertinent or helpful information on the site or existing conditions.
- Site topographical surveys (as needed).
- Documentation of the existing site conditions with digital photographs.
- Soils and/or chemical analysis of the site conditions (as needed).
- Biological assessment of the site and/or localized region (as needed).
- Any other reasonable means of gathering of information that would aid in the successful completion of the project.

This step will be completed when the information gathering activities have provided sufficient information to begin design.

STEP 4 – CONCEPTUAL PLANS

Equinox Engineering will prepare conceptual plans for a rough draft (35% complete) submittal. This plan set will contain sufficient information to identify necessary improvements and a preliminary cost estimate will be prepared and submitted. This step will be completed when the Client and/or any appropriate agency(s) having jurisdiction, approve the rough (35%) design.

STEP 5 – FINAL PLANS

Equinox Engineering will prepare up to two interim and one final plan set as required for the project (65%, 95% and 100% complete) and any required accompanying documents. The final plan set and associated documents will be stamped by a licensed professional engineer as required by law or Best Engineering Practices as appropriate. This step will be completed when the final plans are approved by the client and/or any appropriate agency(s) having jurisdiction.

STEP 6 – BIDDING SERVICES

Equinox Engineering will prepare bid documents and plans, oversee advertisement(s) of the project and schedule and attend an onsite visit for prospective contractors with a plan review and question/answer period. Equinox will assist in the evaluation of the bids received for completeness, competency, qualification, price and make recommendations regarding the selection of the contractor. This step will be completed when the chosen Contractor and Client have entered into a contractual agreement for construction.

STEP 7 – CONSTRUCTION MANAGEMENT

Equinox Engineering will provide Construction Management services that will oversee the chosen Contractor throughout the course of the construction window. This service will include:

- Periodic on-site inspections and subsequent construction inspection reports.
- Digital photo documentation of the construction process.
- Payment request review and recommendation (approval or denial).
- Change order negotiation and recommendations.
- Evaluation of site condition changes requiring any needed design-build modifications.

This step will be completed when the Engineers Certificate of completion is issued and final approval from the client is provided.

3.0 COMPREHENSIVE CONSULTING SERVICES PROVIDED

EVALUATIONS

- Environmental Site Assessment Reports
- Phase One Environmental Site Assessment Reports associated with Property Transfer
- Natural Resources Development Potential Reports
- Wetland Determination Letters
- Wetland Delineation Reports (Phases I, II & III)
- FEMA Flood Plain Analysis Zone Determination Letters
- Hazardous Waste and/or Contaminated Site Evaluation & Remediation Plans

PERMITTING

- Turn Key United States Army Corps Permitting and Regulatory Interface
- City, County, State and Federal Permitting

ENGINEERING DESIGN

- | | |
|---|------------------------|
| • Site Plans | • Grading Plans |
| • Drainage System Design | • Septic System Design |
| • Phyto-Remediation | • Stream Restoration |
| • Wetland Water Control Structures | |
| • Wetland Design (Creation, Enhancement, Restoration, Remediation and Mitigation) | |

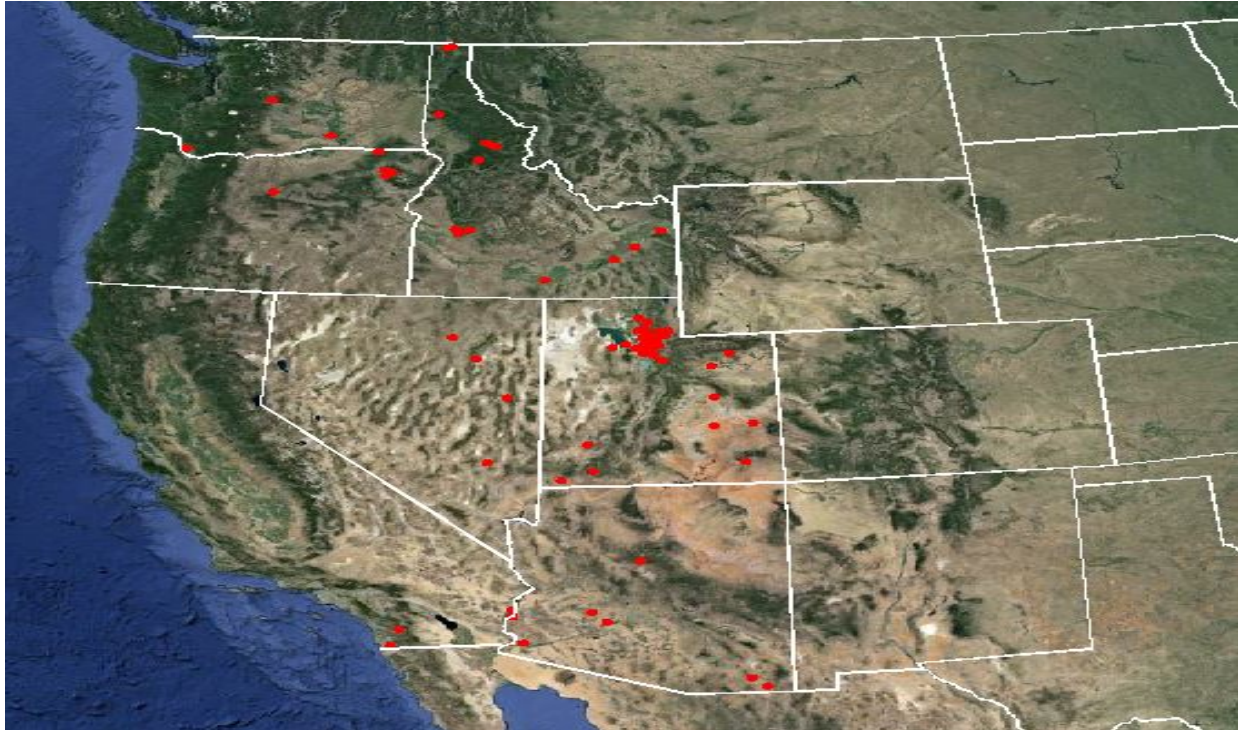
CONSTRUCTION MANAGEMENT

- Turn Key Comprehensive Construction Oversight Management

FORENSIC

- | | |
|--|---|
| • Destructive Testing Evaluation & Reports | • Non-Destructive Evaluations & Reports |
| • Engineering Review | • Expert Witness |

PROJECT EXPERIENCE LOCATIONS



Following are brief descriptions of only a few of the projects Equinox Engineering’s personnel have worked on. Commitment to these projects demonstrates experience in providing design services for a full range of engineering services typically involved in environmental and civil engineering. Involvement in these projects by Equinox or directly from Equinox personnel by providing engineering or biological services including design, project oversight or construction management demonstrates a familiarity and understanding of the scope and breadth needed to complete these and similar projects on time and within budget.

Sample Environmental Projects

- Phase One Environmental Assessments Reports
- Phase Two Environmental Investigation Reports
- Wetland Design & Construction Management
- Stream Restoration Design & Construction Management
- Wetland Delineations

Sample Municipal Projects

- Subdivision Layout & Design
- Water & Storm Water System Layout & Design
- Grading Plans
- Construction Management
- Site Plans
- Utility Plans
- Pavement & Roadway Design

ENVIRONMENTAL PROJECTS

Stream Restoration / Wetland Complex Design and Construction Management

SCHICK LANE STORM WATER WETLANDS

Kaysville City Corporation - Kaysville, Utah
Equinox was contracted to provide Design, Permitting and Construction Oversight for this project that created a water distribution system with three independent wetland cells to attenuate concentrated piped storm water flow from an urban setting. The project also entailed designing a storm water cleanout structure to allow for removal of debris and sediment prior to entering the wetland complex.



HAROLD CRANE WETLANDS

State of Utah - Division of Wildlife Resources
Rural Box Elder and Weber Counties, Utah
Equinox Engineering was contracted to provide design and construction management oversight for upgrades and improvements to this 4600 acre project site that included removal and replacement 13 water control structures, access levee upgrades and vegetated erosion countermeasures, design and construction of new water delivery channels, boat portage, sportsman access improvements and waterfowl habitat development.



RURAL IRRIGATION ANALYSIS AND EDUCATION*

United States Department of Agriculture (USDA)
Natural Resources Conservation Service (NRCS)
Carbon, Duchesne and Emery Counties, Utah
Project oversight, planning and implementation of comprehensive irrigation analysis and on site educational seminars for over 500 entities or individuals enrolled in USDA/NRCS irrigation programs. Deliverables included onsite meeting and analysis of respective irrigation systems to determine efficiency and instruct users on methods to improve effectiveness of irrigation system.



NURSERY BRIDGE FISH PASSAGE RECONSTRUCTION*

Confederated Tribes of the Umatilla – Umatilla County, Oregon
This project provided for reconstruction of the channel due to urban impacts associated with flood control levees with the goal of restoring salmonid passage. The channel was redesigned and reconfigured to allow for jump height restrictions and provide aquatic cover habitat in the degraded reach for spawning and transit of fish species into a fish ladder.



TOLL CREEK RESTORATION

WCEC Engineers – Summit County, Utah
Equinox Engineering was contracted to provide design oversight, permitting support and construction management for this project that restores a very degraded and down cut section of the Toll Creek tributary to East Canyon Creek near Park City, Utah. The project site was impacted by urban development that includes road crossings and a walking trail installed on unstable slopes that impacts the active floodplain. This project provides restoration habitat for aquatics and fish along the 1 mile reach that is bounded by urban development.



ENVIRONMENTAL PROJECTS

Stream Restoration / Wetland Complex Design and Construction Management

MILLCREEK CANYON STREAM RESTORATION/ FISH HABITAT RESTORATION

Private Land Owner – Salt Lake County, Utah
Equinox Engineering was contracted to provide an analysis of scour potential, permitting and design of a restoration project to stabilize the banks and channel that crosses residential property near the mouth of Millcreek Canyon that was impacted due to unpermitted modifications to the water channel.



RIVER RUN WETLANDS

State of Utah - Division of Wildlife Resources - OBWMA - Weber County, Utah
Equinox Engineering was contracted to provide project planning and design services for this project that creates a wetland impoundment rest cell for wildlife utilizing existing land formations in the Weber River Delta.



SALT CREEK WETLAND SEDIMENT REMOVAL AND ISLAND CREATION

State of Utah - Division of Wildlife Resources - Box Elder County, Utah
Equinox Engineering was contracted to provide project planning and design services for this project that removed accumulated sediment in active boat channels and refurbished and/or created loafing/resting islands for waterfowl with vegetated buffers to protect newly created islands from wave and fetch while also providing cover for wildlife.



OGDEN BAY WMA WATER CONTROL STRUCTURE REPLACEMENT PROJECT

State of Utah - Division of Wildlife Resources - OBWMA - Weber County, Utah
Equinox Engineering was contracted to provide project planning and design services for this project that replaced 38 water control structures that were either non-functioning or were very limited functioning. Corrugated metal half round stand pipes were replaced with concrete stop log structures with HDPE pipe across the management area.



FREEPORT DRAIN WETLANDS

The Nature Conservancy of Utah – Layton, Utah
Equinox Engineering was contracted to provide project planning and design services for this project that replaces aging infrastructure that captures and distributes concentrated storm water flow across the Great Salt Lake Shorelands Preserve site to provide irrigation for feed crops for migratory waterfowl. Equinox provided topographical survey data collection, design of a large concrete cast in place water control structure, a dual cells levee system with pre-cast water control structures to allow for effective water distribution.



ENVIRONMENTAL PROJECTS
Stream Restoration / Wetland Complex Design and Construction Management

FARMINGTON BAY J - DIKE UNIT RESTORATION

State of Utah - Division of Wildlife Resources - FBWMA - Davis County, Utah
Equinox Engineering provided design services and construction management oversight for this project. The project created approximately 250 acres of wetland area that allows the Farmington Bay Waterfowl Management Area to manage the wetland cell for shorebird and waterfowl habitat. This project restored the Historic J- Dike that was destroyed in the 1983 floods.



FARMINGTON BAY UNIT 1 WETLAND HABITAT CREATION

State of Utah - Division of Wildlife Resources - FBWMA - Davis County, Utah
Equinox Engineering provided design services and construction management oversight for this project. The project created approximately 270 acres of wetland area that allows the Farmington Bay Waterfowl Management Area to manage the wetland cell for shorebird and waterfowl habitat.



SEEP CREEK WETLANDS

The Nature Conservancy of Utah - San Juan County, Utah
Equinox Engineering provided design services and construction management oversight for this project. The project targeted habitat creation for Gunnison Sage Grouse. Habitat was designed and created that included water features and land contour shaping that supports vegetation and aquatic life cycles necessary for Sage Grouse.



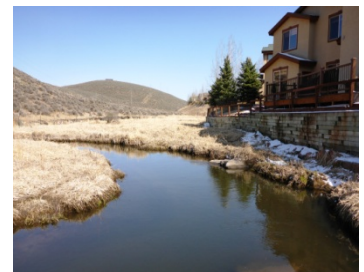
OGDEN BAY NORTH RUN WETLANDS

State of Utah - Division of Wildlife Resources - OBWMA - Weber County, Utah
Equinox Engineering was contracted to provide design services and construction management oversight for this project. The project entails creation of wetland cells in series adjacent to the Weber River outfall that can allow Ogden Bay Waterfowl Management Area to manage the wetland cells for shorebird and waterfowl habitat and provide a showcase in a heavy traffic area of how wetlands can be beneficial to recreation and sporting activities.



TROUT CREEK HOA

Trout Creek Home Owners Association - Summit County, Utah
Equinox Engineering was contracted to investigation, report and corrective measures to mitigate in an environmentally friendly manner erosional forces that are impacting the Subdivision from two different water channels.



ENVIRONMENTAL PROJECTS

Stream Restoration / Wetland Complex Design and Construction Management

ANGEL STREET MITIGATION

Kaysville City Corporation - Kaysville, Utah

Equinox Engineering was contracted to provide evaluation, riparian corridor mitigation design and permitting for a project that will allow for a conveyance ditch to be filled in and paved as part of a school safety program. The project provides for storm drain system outlet into a lowered riparian corridor that will support native vegetation and aquatic wildlife.



EWP (Emergency Watershed Program) PROJECT MANAGEMENT

Natural Resources Conservations Service (NRCS) - Utah

Project management services were provided for multiple concurrent EWP projects totaling over \$20 Million in the state of Utah for flood and fire mitigation measures including: water channel revetment, debris removal, levee construction and/or repair, structure installation, vegetative revetment measures. Damage Survey Report (DSR) authoring and compilation, Services included – Project scoping, preliminary design preparation, Engineering plan reviews, and onsite construction oversight as authorized NRCS representative.



EAST CANYON STREAM RESTORATION

SWCA Environmental Consultants - Park City, Utah

Equinox Engineering provided design services and construction management oversight for this project located along a highly degraded reach of the stream due to over grazing and excessive vertical bank erosion. Project objectives include: fish passage, fish habitat creation/conservation, sediment transport reduction, lowering water temperature, and riparian shading to control invasive Macrophytes that deplete the dissolved oxygen which has threatened indigenous fish habitat and populations.



COOKE RANCH STREAM RESTORATION AND WETLANDS*

Teton Regional Land Trust - Victor, Idaho

This project in the high mountains of Idaho required an engineering approach to account for harsh climate of this region and associated biological venue. Project deliverables included: 1) Design of a newly created open water impoundments 2) Flood control structures allowing water flow-through capabilities 3) Bi-furcating stream flow structures 4) Irrigation distribution system 5) Major vegetative stream bank stabilization and riparian corridor restoration.



KAYS CREEK STREAM RESTORATION AND WETLANDS*

The Nature Conservancy of Utah - Kaysville, Utah

This 185-acre project was designed and constructed to alleviate the deep cutting and incised condition of the final leg of Kays Creek before terminating at the Great Salt Lake. Project deliverables include: 1) Design of a new 680 CFS water control structure that allowed lateral flow distribution and trash pass-through from the upstream urban interface 2) Stream restoration components to widen the channel footprint with site specific design contouring and constructed sub-flood and flood plains complimenting braided and meandering base flows.



ENVIRONMENTAL PROJECTS

Stream Restoration / Wetland Complex Design and Construction Management

STEPTOE CREEK STREAM RESTORATION AND WETLANDS COMPLEX*

Nevada Division of Wildlife - Ely, Nevada

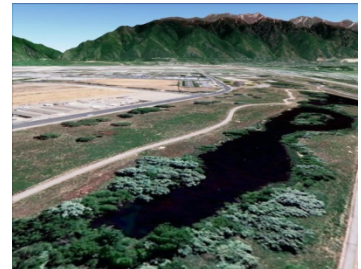
This 3800-acre project required the design and construction of 17 large multi-acre in-series open water impoundments in an open meadow/meandering stream environment. Deliverables include: 1) A complex piped and ditched four-way independent water delivery system including highway and road crossings. 2) Design and construction of over 100 water control structures and/or fixed crest diversion weirs. 3) Over 10 miles of open water channels and stream bank and riparian corridor restoration 4) Fish habitat/ passage for endangered fish.



URBANIZED STREAM RESTORATION & STORM WATER DETENTION*

United States Air Force - Hill AFB Utah

Engineering services were provided to rehabilitate a natural existing stream channel to allow for restoration of a riparian corridor while utilizing existing topography and constant water flow to provide storm flow storage in the form of a detention basin with restrictive orifice outlets and spillways. This project provided a working compromise between stream restoration and functionality for storm flood control in a very urban environment.



900 SOUTH OXBOW RESTORATION AND ENHANCEMENT

SWCA Environmental Consultants / Salt Lake City Corp - SLC, Utah

Equinox Engineering was contracted to provided design services and construction management oversight for this urban wetland restoration project located in Salt Lake City. This project provides a newly created urban park around a newly created wetland cell constructed within the oxbow. Services provided include grading plan, park layout, concrete structure design and assistance with master concept planning.



JORDAN RIVER PARKWAY TRAIL RESTORATION AND ENHANCEMENT

SWCA Environmental Consultants / Salt Lake City Corp - SLC, Utah

Equinox Engineering was contracted to provided design services and construction management oversight for this urban wetland restoration project located in Salt Lake City. This project provides newly created gravity flow wetland cells designed to reconnect the river to the historical flood plain and riparian corridor enhancement with vegetative erosion control features over hardened rock riprap. Services provided include grading plan, park layout, structure design and assistance with master concept planning.



SCOTT M MATHESON WETLAND PRESERVE

The Nature Conservancy of Utah - Moab, Utah

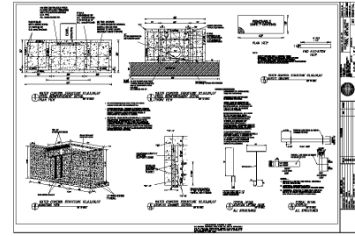
Equinox Engineering provided design services and construction management oversight for this 895-acre wetland preserve enhancement project. This project entailed design of a water delivery system utilizing effluent from the City of Moab wastewater treatment plant to deliver constant water to the preserve, upgrading existing water management infrastructure, provide a distribution system that allows independent control for multiple wetland cells and install overflow spillways to protect against seasonal flooding of the Colorado River.



ENVIRONMENTAL PROJECTS
Stream Restoration / Wetland Complex Design and Construction Management

LAKE POINT WETLAND COMPLEX

Kennecott Utah Copper - Tooele County, Utah
Equinox Engineering provided design and manufacturing of seven concrete water control structures for this project. Water Control Structures were designed to allow for effective wetland management and included dual stop log bays with built in overflow protection.



DUKE ENERGY WETLANDS*

Duke Energy – Natural Gas Electrical Generation Plant
Maricopa County, Arizona
Design and construction management services were provided to complete this 86-acre wetland project in the dry and arid Arizona climate. Project deliverables included design and construction of multiple wetland cells in series and parallel configuration to allow for re-cycling of water and utilization of cells as plant and vegetation experimentation locations for the University of Arizona.



PALO VERDE WETLAND COMPLEX*

California Department of Fish and Game - Blythe, California
Project deliverables for this 1305-acre project in the California desert required design of a gated concrete ditch water delivery system(s) to supply water from the Colorado River to wetland cells and moist soil units designed as food plots to provide refuge for migratory birds along the Pacific and Intermountain flyways. Specific design criteria required construction utilizing laser land leveling methodology to maximize efficiency and minimize water loss.



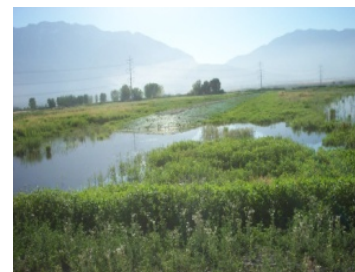
SWANER NATURE PRESERVE WETLANDS AND STREAM RESTORATION*

Swaner Nature Preserve - Park City, Utah
This 560-acre restoration project involved repairing one of the last existing high mountain meadows in the intermountain west from ranching and agricultural operations. Deliverables included: 1) Filling and/or plugging of ditches to recharge the ground water table 2) Open water ponds and nesting islands 3) Stream bank stabilization & riparian corridor restoration 4) Design of specifically configured habitat ponds for re-introduction of the Columbian Spotted Frog, a native species no longer found on the site due to habitat loss.



TIMPANOGOS DE-CHLORINATION PONDS AND TREATMENT WETLANDS*

Timpanogos Special Sewer District - American Fork, Utah
This project at an operational 48-MGD wastewater treatment plant facility created new wetlands and upgraded existing treatment wetland cells by providing 3 separate and independent outlets from the plant. 1) Above ground slotted pipe discharge into newly created wetlands 2) Directional flow through parallel in-series cells designed for de-chlorination retention time with outlet via custom self-cleaning rotating fish screen to protect the treatment plant from invasive carp intrusion 3) Direct discharge through existing pipe network.



ENVIRONMENTAL PROJECTS
Stream Restoration / Wetland Complex Design and Construction Management

QUIGLEY WETLAND COMPLEX*

Arizona Game & Fish – Yuma County, Arizona

This project created new moist soil units and enhanced existing wetlands to provide a more sustainable wetland habitat complex to support migrant bird populations within the flyway. Deliverables included: 1) Design and construction of a wetland complex with moist soil units 2) Pumped and piped water delivery system 3) Tailored management plan to maximize the native vegetation, animal life and water resources.



ARLINGTON WATERFOWL MANAGEMENT AREA*

Arizona Game & Fish / Salt River Project - Arlington, Arizona

This project enhanced and expanded an existing wetland complex to provide specific habitat for the Southwest Willow Flycatcher. Deliverables include: 1) Creation of new wetland cells with connection to existing cells 2) Water control structure design and installation 3) Re-routing of rural drainage flows into the wetland complex 4) Providing for multiple overflow fixed crest weirs capable of diverting over 4000 CFS to protect project improvements.



WHITEWATER DRAW *

Arizona Game & Fish - McNeil, Arizona

This project provided for the creation of new moist soil unit wetland cells that were designed to provide habitat, food plots and rest areas for migrant birds. Deliverables included: 1) Design and construction of new berms and/or levees 2) Water control structure design and installation 3) Pump and pipe water delivery system. Engineering challenges with this project included arriving at a design configuration that mitigated against water loss during delivery and open water management for retention time in the wetland cells.



CIBOLA NATIONAL WILDLIFE REFUGE *

United States Fish & Wildlife Service - Cibola NWR – Cibola Arizona

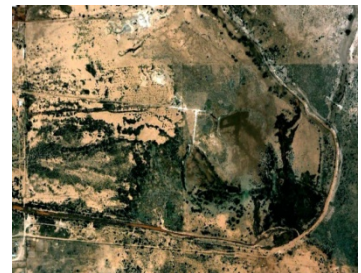
Multiple projects were undertaken with Cibola NWR that included the following: 1) Long Pond Wetlands Creation 2) Crane Roost Wetlands Creation 3) Hippie Burn Restoration 4) Fire Unit restoration 5) Hunt Unit Water Delivery System Design and Construction 6) Farm Unit Master Plan. Design services, Management Plans, Contract Administration and Construction Management services of various levels and degrees were provided for the above listed separate projects located on the Cibola Wildlife Refuge on the lower Colorado River.



SAND HILL FARMS*

NRCS and Private Landowners- Cochise County, Arizona

This project required an NRCS approved design for the enhancement of an existing wetland complex that is prone to flash floods of up to 4500 CFS. The design provided for the refurbishment of an existing levee and internal impoundment complex while allowing for diversion of the peak flows around the complex. Deliverables included: 1) Diversion water control structure design 2) Wetland complex design 3) Sediment trap basins that allowed for post flood mining and recovery of sand and gravel products that could be sold for a profit.



ENVIRONMENTAL PROJECTS

Stream Restoration / Wetland Complex Design and Construction Management

ZAMZOW WETLANDS COMPLEX*

NRCS / USDA - Emmett, Idaho

This project located near Boise, Idaho is owned and operated by a private landowner and was completed in partnership with NRCS under the auspices of a permanent wetland easement. This project restored historic flood plain wetlands associated with the Payette and provided for the creation of shallow and deep wetland cells, new moist soil units designed to provide habitat, food plots and rest areas for migrant birds.



PAHRANAGAT NATIONAL WILDLIFE REFUGE WETLANDS*

United States Fish & Wildlife Service - Alamo, Nevada

This project completed in the high desert of Southern Nevada required an engineering approach to account for fine soils and arid climate found in this region and provide for suitable habitat for Vegetation and animals. Project deliverables include: 1) Restoration of existing and completion of new concrete lined water delivery system with gated control 2) Multiple wetland cells designed in series and parallel configuration to maximize water usage 3) Installation of over 30 water control structures



MAGGIE CREEK WETLAND COMPLEX*

Maggie Creek Ranch - Elko, Nevada

This project on a private livestock ranch on the Humboldt river channel provided a design to connect ancient oxbow depressions to the current river channel for fish passage and wildlife habitat. The design also included multiple wetland cells connected in series along the length of the valley with water control structures to provide connectivity for emergent marsh habitat using water from adjacent streams. A gated stop log style concrete water control structure was also installed at the outlet of a manmade lake to sustain the wetland complex.



RUDY WETLANDS*

Rudy Duck Club / NRCS – Salt Lake City, Utah

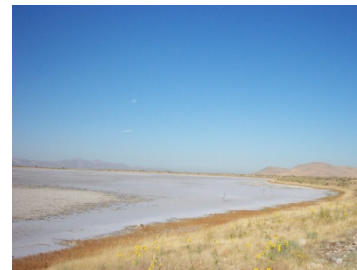
This project on a private duck club on the Great Salt Lake was completed in conjunction with NRCS. Deliverables included: 1) Restoration of the main water supply channel 2) Installation of several salt-water playa wetland cells with piped and gated water control structures 3) Dual gated headwater control structures for diversion and control of water from adjacent landowners.



GREAT SALT LAKE WETLANDS*

Audubon Society – Salt Lake City, Utah

This project located on the southern shore of the Great Salt Lake provides fresh water emergent marsh and open water habitat for migratory shorebirds. Deliverables included: 1) Design for Rerouting of gravity water supply from main supply channel 2) Design of custom water control structures 3) Independent wetland cell control in series and parallel configuration.



CHESAPEAKE BAY WETLANDS*

Chesapeake Bay Duck Club – Corrine, Utah
This project located on the northeastern shore of the Great Salt Lake provides open water, emergent marsh salt water playa type wetland habitat for migratory birds that supports the duck club operations. Deliverables included: 1) New wetland cells creation or enhancement 2) Design of custom concrete water control structures 3) Independent wetland cell control in parallel and series configuration.



**ENVIRONMENTAL PROJECTS
Reports / Investigations**

PROPERTY BOUNDARY EVALUATION AND STAKEOUT

Morton Webster Parcels
 The Nature Conservancy of Utah - Davis County, Utah
Equinox Engineering was retained to research historic property boundary documents and locate the property corners to allow for management of conservation easements and hunting considerations.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Needles Outpost
 The Nature Conservancy of Utah - San Juan County, Utah
Equinox Engineering completed this Phase One Environmental Site Assessment Report for Property located in "Red Rock Country" San Juan County immediately adjacent to Canyonlands National Park. The property contains a historical airstrip, an active campground with bulk fuel storage and archeological significant objects.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT / MINERAL ASSESSMENT

Pugsley Property
 The Nature Conservancy of Utah - Box Elder County, Utah
Equinox Engineering completed this Phase One Environmental Site Assessment Report and Mineral Development Potential for the Pugsely Property Conservation Easement located in rural Box Elder County.



VEGETATED STRIP ANALYSIS - URBAN RUNOFF EVALUATION

Private Land Owner - Davis County, Utah
Equinox Engineering was retained to complete an urban runoff evaluation for property that will be impacted by the Legacy Highway Expansion project through Davis County. The evaluation considered environmental impacts related to storm flow particulates associated with treatment capability of native wetland vegetation that could be utilized to provide primary and secondary filtering treatment capability to the runoff immediately adjacent to the point source before reaching historic established wetlands associated with the Great Salt Lake.



ENVIRONMENTAL PROJECTS
Reports / Investigations

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Dearing Property

Private Land Owner - Salt Lake County, Utah

Equinox Engineering completed this Phase One Environmental Site Assessment Report for the property to assist with the permitting of the property to allow for development of a storage facility in an urban setting.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT / MINERAL ASSESSMENT

Palladium Hidden Owl

The Nature Conservancy of Utah - Grand County, Utah

Equinox Engineering completed this Phase One Environmental Site Assessment Report and Mineral Development Potential for the Palladium Hidden Owl ranch located on the banks of the Colorado River in Grand County.



WATER RIGHTS PROOFING

Legacy Nature Preserve / Freeport Drain

The Nature Conservancy of Utah - Davis County, Utah

Equinox Engineering provided professional consulting services to proof water rights which entail investigation and application of findings to the Utah Division of Water Rights.



SUBSURFACE WATER EVALUATION

Legacy Nature Preserve

The Nature Conservancy of Utah - Davis County, Utah

Equinox Engineering provided water sampling to test and evaluate sub-surface water flows that could be impacted by upgrade discharge of toxic chemicals. Water from multiple solar pump wells was tested to determine the level of contamination of the local aquifer.



SOILS EVALUATION AND ANALYSIS

Talvy Residence

Private Landowner - Salt Lake County, Utah

Equinox Engineering provided soils analysis to facilitate permitting for foundations of a renovated home in a historic district of old Salt Lake City. The evaluation involved soils evaluation for compaction requirements and loading capabilities associated with spread footing design.



ENVIRONMENTAL PROJECTS
Reports / Investigations

SOILS INVESTIGATION AND STRUCTURAL DESIGN

North Fork Provo River

Imbue Design - Utah County, Utah

Equinox Engineering completed a soils investigation to support the protection of the water shed and steam habitat in the Sundance Utah area that were proposed for residential development. Equinox provided structural designs for concrete post and pier support to keep structures out of the active water channel.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Johnson Bench Preserve

The Nature Conservancy of Utah - Garfield County, Utah

Equinox Engineering completed this Phase One Environmental Site Assessment Report on property located in the Bryce Canyon Area to support Sage Grouse Habitat preservation in Southern Utah.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Great Salt Lake Shoreline Preserve - Day Trust Parcels

The Nature Conservancy of Utah - Davis County, Utah

Equinox Engineering completed this Phase One Environmental Site Assessment Report on property located along the Eastern edge of the Great Salt Lake in Rural Davis County to support the Development of the Great Salt Lake Shorelines Preserve.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Grouse Creek Parcels

The Nature Conservancy of Utah - Box Elder and Tooele Counties, Utah

Equinox Engineering completed Four separate Phase One Environmental Site Assessment Reports for property located in the West Desert near Grouse Creek, Utah and along the western along the Western Edge of the Great Salt Lake to assist TNC with their efforts to preserve Sage Grouse Habitat.



MINERAL DEVELOPMENT POTENTIAL ASSESSMENT

Blue Sky Ranch - Wanship Utah

Equinox Engineering completed an assessment to determine the potential for underground mineral development for the Blue sky Ranch Resort Properties located in Summit County Utah to support their land preservation efforts.



ENVIRONMENTAL PROJECTS
Reports / Investigations

MINERAL DEVELOPMENT POTENTIAL ASSESSMENT

Grouse Creek Parcels

The Nature Conservancy of Utah - Box Elder and Tooele Counties, Utah
Equinox Engineering completed an assessment to determine the potential for mineral development on properties associated with the Grouse Creek Parcels located in the West Desert near Grouse Creek, Utah and along the western along the Western Edge of the Great Salt Lake to assist TNC with their efforts to preserve Sage Grouse Habitat.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Legacy Nature Preserve Parcels

The Nature Conservancy of Utah - Davis County, Utah
Equinox Engineering completed Six separate Phase One Environmental Site Assessment Reports for property located along the Urban Interface corridor near the Legacy Highway to support the development of the Great Salt Lake Shoreline Preserve in Northern Utah.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Utah Veterans Memorial Park

SWCA Environmental Consultants - Bluffdale, Utah
Equinox Engineering completed a Phase One Environmental Site Assessment Report on the Utah Veterans Memorial Park Property adjacent to Camp Williams Military installation as part of a complete Environmental Impact report required for infrastructure upgrades.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Smith Parcel

The Nature Conservancy of Utah - Davis County, Utah
Equinox Engineering completed a Phase One Environmental Site Assessment Report on the Smith Parcel property located near the eastern shore of the Great Salt Lake in Rural Davis County, Utah.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Allen Parcel

The Nature Conservancy of Utah - Washington County, Utah
Equinox Engineering completed a Phase One Environmental Site Assessment Report on the Allen Parcel property located on the Virgin River in South Western Utah



ENVIRONMENTAL PROJECTS
Reports / Investigations

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT

Adams Parcels

The Nature Conservancy of Utah – San Juan County, Utah

Equinox Engineering completed a Phase One Environmental Site Assessment Report for this property that will be used as a Gunnison Sage Grouse Habitat Preserve located in Southeast Utah



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT & NATURAL RESOURCES DEVELOPMENT POTENTIAL REPORT

White Dome Parcel

The Nature Conservancy of Utah - Saint George, Utah

Equinox Engineering completed a Phase One Environmental Site Assessment and Natural Resources Development Potential Report for the White Dome Property located near Saint George, Utah.



PHASE TWO WETLAND ASSESSMENT REPORT – RURAL SITE*

Alton Coal - Iron County, Utah

A Phase Two Wetland Determination report was completed to assist with infrastructure upgrades that included a new railroad spur and loading facility for Alton Coal located in Rural Iron County, Utah.



PHASE TWO WETLAND ASSESSMENT REPORT – URBAN SITE*

RLM Architects - Lehi, Utah

A Phase Two Wetland Determination report was completed to provide a determination on the site as to the existence of jurisdictional wetlands or waters of the United States that would affect the planned construction of a church and associated improvements.



WETLAND DELINEATION – PLAIN CITY SUBDIVISION*

Hawkeye Developers - Plain City, Utah

A Wetland Delineation report was completed on a 137-acre parcel of land located in Plain City, Utah. The Delineation report was prepared for Hawkeye Developers, in preparation for developing the property for mixed-use residential lots. This delineation identified different types of wetlands including riparian corridor, wet meadow and emergent marsh. This Wetland Delineation required the Arid West Region Supplement.



ENVIRONMENTAL PROJECTS
Reports / Investigations

WETLAND DELINEATION – MATHESON PRESERVE

The Nature Conservancy of Utah - Moab, Utah
Equinox Engineering provided consulting services to complete a Wetland Delineation report for The Nature Conservancy of Utah as a requirement for wetland creation and enhancement improvements based on a design provided by Equinox Engineering to this 895 acre wetland located on the banks of the Colorado River in Moab, Utah. This Wetland Delineation required the Arid West Region Supplement.



WETLAND DELINEATION - HANSEN PARCEL

Private Landowner - Park City, Utah
Equinox Engineering provided consulting services to complete a Wetland Delineation report for a Private Landowner to obtain permits for the development and construction of a private residence. This Wetland Delineation required the use of the Western Mountains, Valleys and Coast Region Supplement to the ACOE Delineation manual.



WETLAND DELINEATION AND STREAM CHANNEL EVALUATION- FOX PARCEL

Private Landowner - Park City, Utah
Equinox Engineering provided consulting services to complete a Wetland Delineation report and natural stream channel evaluation for a Private Landowner to obtain permits for the development and construction of a private residence. This Wetland Delineation required the use of the Western Mountains, Valleys and Coast Region Supplement to the ACOE Delineation manual.



ROADWAY FLOOD DAMAGE EVALUATION AND REMEDIATION REPORT

Private Landowner – Summit County, Utah
Equinox Engineering provided consulting services to complete a comprehensive forensic flood damage evaluation and report relating to infrastructure destroyed by flooding. The report provided design parameter for corrective measures and culpability by responsible parties.



PHASE ONE ENVIRONMENTAL SITE ASSESSMENT & NATURAL RESOURCES DEVELOPMENT POTENTIAL REPORT

The Nature Conservancy of Utah – Grand and San Juan Counties, Utah
Equinox Engineering completed a Phase One Environmental Site Assessment and Natural Resources Development Potential Report for the Grus and Bates Parcels located in Southeastern Utah.



HABITAT SUITABILITY EVALUATION AND PRELIMINARY DESIGN REPORT

The Nature Conservancy of Utah – Seep Creek Property San Juan County, Utah
Equinox Engineering completed a topographical survey, habitat suitability evaluation and preliminary design and cost estimate to construct natural wetland complex to support Gunnison Sage Grouse population near Monticello, Utah.



MUNICIPAL PROJECTS

Planning & Design

ROCK RETAINING WALL EVALUATION AND DRAINAGE PLAN

Andrescapes - Farmington, Utah
Equinox Engineering was retained to perform an as-built dynamic and static structural evaluation on a residential rock wall and make recommendations to the builder on how to correct deficiencies. Equinox also provided engineered drainage plans for the project site and permitting support documents.



JORDAN RIVER IRRIGATION WATER LINE UPGRADES

Private Land Owner - West Valley City, Utah
Equinox Engineering was retained to perform an evaluation and make design recommendations to an existing water line that crosses an Army Corps of Engineers maintained levee to allow for permitting approval. Equinox provided topographical survey collection, design plans, technical specifications, permit authoring and fostering with Salt Lake County and the Army Corps of Engineers.



STAGE COACH ESTATES ROADWAY IMPROVEMENTS

Stage Coach Estates HOA - Park City, Utah
Equinox Engineering was retained to perform an as-built evaluation for roadside improvements in a rural mountain setting to allow for preparation of legal supporting documents and plans required to assist with homeowner required conditions. Equinox provided topographical survey, design renderings, formal letters of findings, quantity calculations and corrective construction documents as required for permitting.



OLYMPIC ROADWAY RETAINING WALL AND TUNNEL EVALUATION

MC Contractors - Park City, Utah
Equinox Engineering was retained to perform an as-built dynamic and static structural evaluation on a commercial roadside boulder wall and drainage culvert and make recommendations to the builder to allow for permitting. Equinox provided design renderings, formal letters of findings, quantity calculations and corrective construction documents as required for permitting.



MUNICIPAL PROJECTS
Planning & Design

POWER LINE DETENTION BASIN EVALUATION

Kaysville City Corporation - Kaysville, Utah
Equinox Engineering was retained to conduct a storage balance and drainage study related to existing infrastructure inflow and outflow characteristics and provide recommendations and cost analysis related to system capabilities and potential service upgrades. Evaluation and recommendations were compiled and used as part of planning and development practices by the Landowner and Developers.



LAND DRAIN EVALUATION

Kaysville City Corporation - Kaysville, Utah
Equinox Engineering was retained to conduct a drainage study related to historic irrigation practices in areas that are being developed and how the historic underground drains impact the ability of the land to drain storm water away from the site. Evaluation and recommendations were compiled and used as part of planning and development practices by the Landowner and Developers.



ROCK WALL EVALUATION

Private Land Owner - Layton, Utah
Equinox Engineering was retained to perform an as-built dynamic and static structural evaluation on a residential rock wall and make recommendations to the builder on how to correct deficiencies.



CORAL GATE SUBDIVISION*

Bradley Holloway & Associates - San Ysidro, California
Engineering services including Design, Utility Layout and Plan Set Preparation were provided to facilitate the design and construction of this 440 lot subdivision located in San Diego County California just north of the International border between Mexico and the United State.



FARMINGTON GREENS SUBDIVISION*

EWP Engineering - Farmington, Utah
Engineering services including Configuration Layout Design, Storm Water system design and sizing, Underground Utility and Infrastructure layout, Plat Map preparation, and Permitting were provided to facilitate the design and construction of this multi-use subdivision located in Farmington, Utah.



MUNICIPAL PROJECTS
Planning & Design

SUGAR PLUM FARMS SUBDIVISION*

Stantec Consulting - West Valley City, Utah
Engineering services including Configuration Layout Design, Storm Water system design and sizing, Underground Utility and Infrastructure layout, Plat Map preparation, Construction Plans and Specifications Preparation, Permitting assistance, Wetlands Area Determination and Construction Management were provided to facilitate the design and construction of this subdivision located in West Valley City, Utah.



SPRING CANYON SUBDIVISION*

Gilson Engineering - Herriman, Utah
Engineering services including Configuration Layout Design, Storm Water system design and sizing, Underground Utility and Infrastructure layout, Plat Map preparation and Permitting assistance were provided to facilitate the design of this subdivision located in Herriman, Utah.



GRANTSVILLE ESTATES SUBDIVISION*

Stantec Consulting - Grantsville, Utah
Engineering services including Configuration Layout Design, Storm Water system design and sizing, Underground Utility and Infrastructure layout, Plat Map preparation and Permitting assistance were provided to facilitate the design and construction of this subdivision located in Grantsville, Utah.



ESCONDIDO CREEK NATURAL CHANNEL REVETMENT*

Private Development- Escondido, California
Engineering services were provided to design revetment and storm flow protection for adjacent lots and homes along a highly urbanized reach of Escondido Creek as it passed through residential areas of Escondido, California. Deliverables include flow calculations, flood plain analysis, plans and construction documents.



STORM WATER DETENTION BASIN RE-DESIGN*

SunCrest Subdivision - Draper, Utah
Engineering services were provided for this project which entailed the near complete re-design of a storm-water detention basin facility that had previously been constructed and was in litigation. The new design remedied subsurface water infiltration flows and impacts to downstream property owners. The re-design provided for a closed basin configuration utilizing a water impervious membrane lining and riprap armoring, the inclusion of multiple restricted orifice outlets at various levels and a floating tether attached "skimmer".



MUNICIPAL PROJECTS
Planning & Design

STORM WATER MASTER PLAN UPDATE*

City of Saratoga Springs - Saratoga Springs, Utah
Engineering services were provided to evaluate existing storm water collection system infrastructure network for adequacy based on current conditions and projected future build-out. Design and construction documents were prepared and provided for deficient sections and for future expansion.



CULINARY WATER DELIVERY SYSTEM UPGRADE*

Private Water Users Special Service District - Herriman, Utah
Engineering services were provided to manage the design for an upgrade of a booster pump station for a private water service district. Pump designs were required to increase flow and fire protection due to increasing build-out in the service area and also provide for gravity assist from existing infrastructure.



ANGEL STREET PROJECT CORPS PERMIT & WATER RIGHTS REVIEW

Kaysville City Corporation - Kaysville, Utah
Equinox Engineering provided permitting expertise to review and recommend action plan for Army Corps of Engineers Nationwide 27 Permit application / mitigation plan development and connected water rights associated with municipal infrastructure improvements along a stretch of the partially developed the Angel Street corridor in Kaysville, Utah.



RESIDENTIAL LOTS – SITE PLANS, DRAINAGE PLANS & RETAINING WALLS*

SunCrest Subdivision – Draper, Utah
Engineering services were provided to design and layout residential lot site plans, individual and collective area drainage plans and structural retaining walls for numerous lots across the subdivision.



SITE PLAN UTILITY MAPPING & PARCEL IDENTIFICATION*

Utah Department of Transportation – Utah County, Utah
Management oversight over engineers, drafters, surveyors and research personnel was provided in an effort to locate and map all utilities and parcels of land along or adjacent to Utah State Road 77 from Interstate 15 to Main Street in Springville. Deliverables included comprehensive maps of all utilities, lots and current owner information, parcel maps showing physical areas subject to imminent domain.



MUNICIPAL PROJECTS
Planning & Design

SITE & UTILITY PLAN / ROADWAY DESIGN*

The Canyons Resort– Park City, Utah

Engineering services were provided to facilitate individual and group residential lots which included: Site and utility plans, roadway layout and pavement design and development of construction plans and documents for this mixed-use residential / commercial development.



SITE / GRADING / UTILITY PLAN AND MUNICIPAL INFRASTRUCTURE

Mountain King Enterprises - Prescott, Arizona

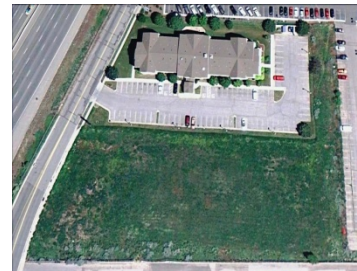
Equinox Engineering provided engineering services to complete and provide all necessary plans for development of a high-end residential lot and home. Design services include Municipal Water Line extensions and connection Gas and Electric Utility connections, Septic System design, Retaining walls Design, Grading and Drainage Plans, Utility connections to city services and all associated permits and regulatory interface between City and County agencies.



SITE & GRADING PLAN – HOTEL SITE*

Bountiful, Utah

Engineering services were provided to complete a site and grading plan for this commercial hotel site in Bountiful, Utah. Deliverables included construction cost estimates, construction drawings and specifications.



SCOUR COUNTER MEASURES EVALUATION AND DESIGN

Trout Creek Home Owners Association -- Summit County, Utah

Equinox Engineering provided civil and environmental services to evaluate existing infrastructure for potential scour damage associated with East Canyon and Spring Creek watersheds. Equinox also provided design and permitting services for rehabilitation of a deficient retaining wall that provides protection to the HOA. Equinox provide an economical and "green" solution to correct the concerns.



CIVIL SITE DESIGN

The Nature Conservancy of Utah -- Davis County, Utah

Equinox Engineering provided comprehensive civil site design for grading, and utilities access to this site to support development and construction of a new shop and Headquarters facility to support the Great Salt Lake Shorelines Preserve site operations.



MUNICIPAL PROJECTS
Planning & Design

CIVIL SITE DESIGN

Private Land Owner - Salt Lake County, Utah
Equinox Engineering provided comprehensive civil site design for grading, utilities, site storage for storm runoff and retaining wall design for private lot development in canyon terrain Services also included permitting with Salt Lake County for development in a Foothills and Canyons development with restrictions area.



INDUSTRIAL / MUNICIPAL PROJECTS
Planning, Design & Construction Management

CONCRETE BRIDGE DESIGN

Private Land Owner - Park City, Utah
Equinox Engineering completed a concrete bridge design to provide access into the property which was required to span existing wetlands and water channel in order to minimize cost for the owner and to assist with the permitting process while avoiding and eliminating any impacts to the wetlands. Equinox Engineering also provided flood flow calculations and documents to the Army Corps of Engineers and Summit County to assist with the permitting process.



INTERSECTION AND PAVEMENT DESIGN*

Sugar Plum Farms - Alpine Homes Subdivision - West Valley City, Utah
Engineering design services were provided to complete this intersection and pavement design. Deliverables included traffic flow calculations, construction cost estimates, construction drawings and specifications.



CONSTRUCTION MANAGEMENT*

Kennecott Smelter Upgrade – Magna, Utah
Civil Engineering and Construction Management services were provided to CDK Construction to assist with their contract fulfillment to construct concrete footings, foundations, tank platforms, structural pipe support racking, concrete piers and pylons and access roadways for the smelter upgrade and construction project. Oversight was provided for seismic steel installation, concrete reinforcement and pours, roadway construction and environmental compliance reporting.



CONSTRUCTION MANAGEMENT*

Thanksgiving Point – Lehi, Utah
Construction Management services were provided for the installation of all the architectural sheet metal and hot asphalt bitumen built up roofing for the Thanksgiving Point retail plaza complex and Barn structures.



INDUSTRIAL / MUNICIPAL PROJECTS
Planning, Design & Construction Management

CONSTRUCTION MANAGEMENT*

Utah National Guard Armory – Draper, Utah
Construction Management services were provided for the seismic structural member upgrade and retrofit of the building complex. Construction Management oversight was also provided to install new roof decking materials and built up roof overlays and installation of new toxic fumes ventilation systems for several work spaces.



** Indicates experience obtained while employed with another firm other than Equinox Engineering*

RECENT PROJECTS AND AGENCIES /ENTITIES WORKED WITH

IDAHO

Cooke Wetlands – Victor
Kirk Wetlands – Driggs
Zamzow Wetlands – Emmett

UTAH

Audubon Society Wetlands – Great Salt Lake
Bear River Bird Refuge – Brigham City
Chesapeake Duck Club – Corrine
Hansen Parcel Wetland Delineation – Park City
Jarmin Wetlands – Park City
Kays Creek Wetland Complex – Kaysville
Kaysville City Corporation – Kaysville
Matheson Wetlands - Moab
Rudy Duck Club – Salt Lake City
Salt Creek Wildlife Management Area – Tremonton
Salt Lake City Corporation - Jordan River Area Projects
Swaner Nature Preserve – Park City
Timpanogos Special Service District – American Fork
Utah Department of Wildlife Resources

NEVADA

Maggie Creek Farms – Elko
Pahrnagat NWR – Alamo
Steptoe Creek Wetlands – Ely

ARIZONA

Arlington Wetlands – Arlington
Cibola NWR – Cibola
Duke Energy Wetlands – Phoenix
Quigley Wetland Complex – Yuma
Sand Hill Farms – Tucson
White Water Draw – McNeil

CALIFORNIA

Palo Verde Wetlands - Blythe

AGENCIES /ENTITIES

Arizona Game and Fish
Audubon Society
California Department of Fish & Game
Cottage Homes
Ducks Unlimited
Duke Energy
Farmington City, Utah
Idaho Fish and Game
Kaysville City Corporation
MBG+A: The Grassli Group
Natural Resources Conservation Service (NRCS)
Nature Conservancy

Nevada Division of Wildlife
Salt Lake City Corporation
Salt River Power
San Diego City, California
San Diego County, California
Swaner Nature Preserve
SWCA Environmental Consultants
Teton Land Trust
Timpanogos Special Sewer District
Utah Department of Natural Resources
US Fish and Wildlife Service (USFWS)
West Valley City, Utah

5.0 NRCS/USDA TECHNICAL SERVICE PROVIDER (TSP) REGISTERED CATEGORIES

Technical Service Provider Number 10-6949

Channel and Stream bank Stabilization:

- 322 – Channel Bank Vegetation
- 584 – Channel Stabilization
- 326 – Clearing and Snagging
- 500 – Obstruction Removal
- 582 – Open Channel
- 578 – Stream Crossing
- 580 – Stream bank and Shoreline Protection

Irrigation (Water Conveyance):

- 320 - Irrigation Canal or Lateral
- 388 - Irrigation Field Ditch
- 428A - Irrigation Water Conveyance, Ditch and Canal Lining, Non-reinforced Concrete
- 428B - Irrigation Water Conveyance, Ditch and Canal Lining, Flexible Membrane
- 428C - Irrigation Water Conveyance, Ditch and Canal Lining, Galvanized Steel
- 430AA - Irrigation Water Conveyance, Pipeline, Aluminum Tubing
- 430CC - Irrigation Water Conveyance, Pipeline, Non-reinforced Concrete
- 430DD - Irrigation Water Conveyance, Pipeline, High-Pressure, Underground Plastic
- 430EE - Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground Plastic
- 430FF - Irrigation Water Conveyance, Pipeline, Steel
- 430HH - Irrigation Water Conveyance, Pipeline, Ridged Gated Pipeline
- 464 - Land Leveling
- 533 - Pumping Plant
- 587 - Structure for Water Control
- 620 - Underground Outlet

Land Shaping:

- 310 - Bedding
- 453 - Land Reclamation
- 460 - Land Clearing
- 462 - Precision Land Forming
- 464 - Irrigation Land Leveling
- 466 - Land Smoothing
- 500 - Construction Removal
- 543 - Land Reconstruction, Abandoned Mined Land
- 566 - Recreation Land Grading and Shaping
- 572 - Spoil Spreading

Reservoir Sealing:

- 521A - Pond Sealing or Lining, Flexible Membrane
- 521B - Pond Sealing or Lining, Soil Dispersant
- 521C - Pond Sealing or Lining, Bentonite Sealant

Soil Stabilization for Access (Roads):

- 560 – Access Road
- 561 – Heavy Use Area Protection
- 568 – Recreation Trail and Walkway
- 575 – Animal Trails and Walkways
- 655 – Forest Trails and Landings

Surface Water Detention/Retention:

- 348 - Dam, Diversion
- 350 - Sediment Basin
- 356 -Dike
- 378 - Pond
- 397 - Aquaculture Ponds
- 398 - Fish Raceway or Tank
- 402 - Dam
- 410 - Grade Stabilization Structure
- 432 - Dry Hydrant
- 436 - Irrigation Storage Reservoir
- 447 - Irrigation System, Tailwater Recovery
- 552 - Irrigation or Regulating Reservoir
- 587 - Structure for Water Control
- 606 - Subsurface Drain
- 638 - Water and Sediment Control Basin
- 657 - Wetland Restoration
- 658 - Wetland Creation
- 659 - Wetland Enhancement

Land Treatment- Surface Water Management:

- 362 - Diversion
- 412 - Grassed Waterway
- 423 - Hillside Ditch
- 468 - Lined Waterway or Outlet
- 555 - Rock Barrier
- 558 - Roof Runoff Structure
- 557 - Row Arrangement
- 570 - Runoff Management System
- 587 - Structure for Water Control
- 606 - Subsurface Drain
- 600 - Terrace
- 620 - Underground Outlet
- 640 - Water Spreading



Wetlands (Interdisciplinary) Engineering

Components:

- 657 - Wetland Restoration
- 658 - Wetland Creation
- 659 - Wetland Enhancement

Water Management:

- 310 - Bedding
- 482 - Mole Drain

Water Supply Facilities:

- 432 - Dry Hydrant
- 516 - Pipeline
- 533 - Pumping Plant
- 574 - Spring Development
- 614 - Watering Facility

- 636 - Water Catchment
- 648 - Wildlife Watering Facility

Non-Irrigation Water Conveyance:

- 432 - Dry Hydrant
- 516 - Pipeline
- 574 - Spring Development
- 532 - Pumped Well Drain
- 533 - Pumping Plant
- 554 - Drainage Water Management
- 582 - Open Channel
- 587 - Structure for Water Control
- 606 - Subsurface Drain
- 607 - Surface Drainage – Field Ditch
- 608 - Surface Drainage – Main or Lateral
- 620 - Underground Outlet
- 630 - Vertical Drain

6.0 KEY PERSONNEL RESUMES

W. CHRIS CHRISTIANSEN, P.E. – CIVIL/ENVIRONMENTAL ENGINEER

Owner and Principal of Equinox Engineering

Education:

- ❖ BS/Civil Engineering - University of Utah – Salt Lake City, Utah

Experience:

- ❖ Years with Equinox: 13
- ❖ Years with other firms: 22

Professional Engineering License Registrations:

- ❖ Arizona - 39819 / Idaho - 15764 / Nevada - 16133 / Oregon - 88732PE
Utah - 318634 / Washington - 51249

Registration in other states can be obtained as needed usually within a few weeks.

Mr. Christiansen is a registered Civil Engineer in several western states and has over 25 years experience in the construction industry and more than 16 years of civil engineering design and construction management history. His experience includes upper level management with a mid-size construction company in Salt Lake City, Utah, and time spent as an engineering consultant for firms based in Utah, California, and Tennessee.

His experience in the general civil engineering arena includes sub-division design, above ground and below ground utility design, roadway design, water reservoir design, sewer (municipal and septic), storm drain design, grading plans, surveying, structural concrete and/or steel design, forensic investigation, and construction management oversight.

His experience in environmental engineering includes numerous wetland and stream restoration projects in the United States. This includes wetland design, enhancement, creation, restoration, and mitigation with many projects completed under the auspices of restoration easements. Stream restoration/enhancement and riparian corridor restoration/design utilizing flood and sub-flood plain configured water management, fish friendly water control structures, fish screens and invasive species control measures, hardened and depth controlled wildlife and utility stream crossings, and waterway revetment or bank stabilization utilizing hardened materials, and organic and biological methods. Mr. Christiansen is also experienced in hazardous waste remediation, contaminated site cleanup, federal, state, and local permitting, Army Corps of Engineers interface and regulatory compliance, concrete structure design and manufacturing, and can demonstrate extensive construction management duties for projects across the western United States.

As a senior project manager/officer, his duties include the complete oversight for all project related issues from design to plan preparation, and from client interface to bidding and construction inspection oversight and management. Mr. Christiansen has a solid understanding of the fundamentals of hydrology and chemical and biological components that allow him to deliver environmental, wetland, stream restoration, and fish-sensitive type projects to exacting specifications—on time and within budget. His work has been for both the private and public sectors and has included residential, industrial, and commercial projects.

Equinox Engineering was started in 2007 by Mr. Christiansen and continues to provide civil and environmental engineering solutions for projects in the western United States. Mr. Christiansen has been involved with civil and environmental engineering projects with a number of organizations ranging from private landowners to local, city, county, state, and/or federal agencies.

C. David Brown – WILDLIFE BIOLOGIST / RANGELAND ECOLOGIST

Education:

- ❖ BS/Biology – Utah State University – Logan, Utah

Mr. has worked in the wildlife management field in various disciplines. His career started with education in Rangeland Management with emphasis on Range Wildlife relations from Utah State University. His career in fisheries and wildlife spans over 13 years. He has held positions with the U.S. Forest Service, the Utah Division of Wildlife, Idaho Fish and Game.

Mr. White has worked with various agencies and entities over his career that support varied habitats and a wide range of wildlife issues and species including waterfowl, shorebirds, fish and various raptor species. Mr. White has gained valuable experience as a wildlife refuge manager that allows him to approach situations or issues through the lens of practical application as opposed to theory.

Mr. White has also worked as a consultant to provide assistance with regulatory and permitting issues on the local, state, and federal level. His abilities have been instrumental in securing stream alteration permits and guiding clients through the Army Corp permitting process.

Mr. White uses a science-based planning process to identify problems and find real world solutions that are unique, cost effective and beneficial for clients and wildlife and the habitats they need for long-term sustainability.

Mr. White uses his experience and expertise to develop practical science based solutions for the wide range of challenges that are faced in the fisheries and wildlife management field.

Projects include:

- Kay's Creek Riparian Restoration and Wetland Enhancement Project
- Morton Wetland Restoration Project for the Nature Conservancy
- Lakepoint Wetland Creation and Enhancement project for Utah Kennecott Copper
- Matheson Wetlands restoration and water effluent project for The Nature Conservancy
- Installation and design of fish screens for Farmington Bay Waterfowl Management Area
- Rangeland restoration and enhancement projects for wintering big game herds on Tex Creek Wildlife Management area Ririe, Idaho
- Project oversight and design of mitigation area for Legacy Highway Project UDOT
- Rangeland and Riparian restoration projects for the U.S. Forest Service Spanish Fork Ranger District
- Worked with Comprehensive team developing and writing Great Salt Lake Shorebird Management Plan for State of Utah
- Worked with Pacific Corp on management plan for the Bear River Bottoms properties
- Management of various wildlife habitats for Audubon, The Nature Conservancy, State of Utah, State of Idaho and US Government
- Conducted stream restoration projects, census work and removal of non-native fish competing with native cutthroat trout species in the High Uinta Mountains of Utah for the Utah Division of Wildlife
- Various noxious weed identification and eradication projects with various entities and organizations
- Manages properties for Fish and Wildlife species for The Utah Reclamation Mitigation and Conservation Commission in accordance with the Central Utah Water

7.0 REFERENCES AND INSURANCE COVERAGE

REFERENCES

The following references may be contacted as to our performance on previous projects.
References are in alphabetical order

Mr. Josh Belnap
Kaysville City Corporation
23 East Center Street
Kaysville, Utah 84037
801.497.7100
Project: Schick Lane Storm Water Wetlands, Angel Street Mitigation, Power Line Detention Basin

Mr. Scott Bonz
President Trout Creek HOA
559.380.8080
Project: Trout Creek HOA

Mr. Chris Brown
The Nature Conservancy of Utah
Director of Stewardship
559 East South Temple
Salt Lake City, Utah 84102
801.791.1661
Project: Multiple

Mr. Rich Hansen
Utah Department of Wildlife Resources
Ogden Bay Wildlife Management Area Manager
515 East 5300 South
Ogden, Utah 84405
801.391.1454
Project: Multiple

Mr. Brian Nicholson
Martin & Nicholson
brian@mnenvironmental.com
801.703.0982
Project: Multiple

Additional references can be provided upon request

INSURANCE

As a professional engineering firm, Equinox maintains appropriate levels of insurance coverage including the following:

Commercial General Liability Aggregate	\$2,000,000
Products – Completed Operations Aggregate	\$2,000,000
Personal Injury and Advertising Injury	\$1,000,000
Hired Auto & Non Owned Auto	\$1,000,000

Policy information will be provided upon request.