



**Chapman  
Technical  
Group**  
a division of  
**GRW**

December 13, 2017

Division of Natural Resources  
Property and Procurement Office  
324 4<sup>th</sup> Avenue  
South Charleston, West Virginia 25303-1228

**Re: A/E Services for  
Bowden State Fish Hatchery  
Rehabilitation**

Dear Selection Committee:

Chapman Technical Group (CTG) is most interested in providing the architectural and engineering services for the repairs of the Bowden Fish Hatchery. Our project team includes HDR who has a wealth of experience in the science and design of fish and aquatic resources, and recently completed a comprehensive study of the West Virginia Division of Natural Resources' hatcheries. Our team has previously worked together in the design of the Apple Grove hatchery and the wastewater treatment system for Spring Run.

**3.1.a. Communication:** In Chapman Technical Group's project management system, the Project Manager will be the point of contact for the DNR for all communications related to the project. It will be the Project Manager's responsibility to ensure that all project team members receive design directives and are involved in resolving project issues. Having a single point of contact helps minimize confusion and is the most efficient communications method. The Project Manager will also coordinate all progress meetings and site visits during construction and will ensure that all communications are forwarded to the appropriate DNR personnel. For this project, Joseph Bird will serve as the Project Manager.

**3.1.b. Budget Control:** Chapman Technical Group has an excellent track record of completing projects in budget. Our most recent project, the Chief Logan Cabins and Access Road, came in within 2% of our project estimate. We also recently completed a \$6.5 million building renovation in budget for the WV Division of Highways, District 1.

Our method of cost control includes developing accurate opinions of cost in the early stages of design, so that decisions regarding the scope of the project can be addressed early when adjustments to the design are easier to achieve. As the project progresses, we will consider alternate systems that can provide the required result in a way that is cost-effective, both short-term and long-term. We will also develop alternate

200 Sixth Avenue  
Saint Albans, WV 25177

304.727.5501  
304.727.5580 Fax

Buckhannon, WV  
Lexington, KY

[www.chaptech.com](http://www.chaptech.com)



Selection Committee  
December 13, 2017  
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bid items to ensure that the project stays within the budget. During construction, we will work with the contractors to establish a team relationship so that as issues arise, we can work together to find the most cost-effective solution. We are often able to find alternative means of construction that help to control costs associated with unforeseen conditions.

**3.1.c. Schedule Control:** We have completed many projects for the WV State Parks within the allotted schedule, including the Canaan Valley Ski Area Improvements project which was bid as eight separate contracts and involved many specialty consultants. We have a history of timely turnaround on many projects which have been provided by this project team and can meet any schedule required for this project. Our Project Manager will establish internal review deadlines with all parties which will ensure compliance with your schedule for bidding and construction. Our full service firm will allow us to address the issues of the project effectively and efficiently.

During construction, we will strive to maintain a true team relationship so that issues are resolved quickly with input from all parties, including your field representative. It takes a coordinated effort from the Architect and the Owner to apply the appropriate pressure to keep the project moving expeditiously, while maintaining a positive relationship with the Contractor. Also, work in West Virginia State Parks can be subject to extreme weather conditions, which must be taken into consideration when scheduling construction activities.

**3.1.d. Experience:** The Chapman Technical Group team will include Joseph Bird (CTG), who will serve as Project Manager. Ken Ferjancic (HDR) and Matt Cochran (HDR) will assist in the planning and design of the hatchery facilities. Tom Cloer (CTG) will lead the architectural design team. Greg Belcher (CTG) will coordinate the design water and wastewater systems, assisted as required by staff of CTG and HDR. Mechanical, electrical, and structural engineering will be provide by CTG and HDR staff.

You will find all of the requested information regarding our team and our ability to execute the requirements of this project within this submittal. We would very much appreciate the opportunity to present our project team and further discuss your project. In the meantime, if you have any questions or need additional information, please contact me.



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You will find all of the requested information regarding our firm and our ability to execute the requirements of this project within this submittal. We would very much appreciate the opportunity to present our project team and further discuss your project. In the meantime, if you have any questions or need additional information, please contact me.

Sincerely,

**CHAPMAN TECHNICAL GROUP**

Joseph E. Bird, ASLA  
Vice President

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

**MANDATE:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

**"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

**"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

**"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

**AFFIRMATION:** By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: Chapman Technical Group

Authorized Signature: [Signature] Date: 12-8-2017

State of West Virginia

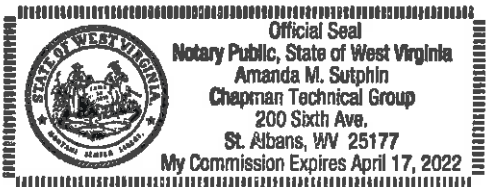
County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 8<sup>th</sup> day of December, 2017.

My Commission expires April 17, 2022.

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]



**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

 V.P.

(Name, Title)

Joseph Bird, VP  
(Printed Name and Title)

200 Sixth Avenue

(Address)

(304) 727-5501 / (304) 727-5580

(Phone Number) / (Fax Number)

jbird@chaptech.com  
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Chapman Technical Group

(Company)

 V.P.

(Authorized Signature) (Representative Name, Title)

Joseph Bird, VP  
(Printed Name and Title of Authorized Representative)

12-8-2017

(Date)

(304) 727-5501, (304) 727-5580  
(Phone Number) (Fax Number)

West Virginia Ethics Commission  
**Disclosure of Interested Parties to Contracts**

(Required by W. Va. Code § 6D-1-2)

Contracting Business Entity: Chapman Technical Group Address: 200 Sixth Avenue  
St. Albans, WV 25177

Authorized Agent: Joseph E. Bird Address: 200 Sixth Avenue, St. Albans, WV 25177

Contract Number: DNR 1800000006 Contract Description: A/E services for Bowden Fish Hatchery

Governmental agency awarding contract: WV Division of Natural Resources

Check here if this is a Supplemental Disclosure

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below (attach additional pages if necessary):

**1. Subcontractors or other entities performing work or service under the Contract**

Check here if none, otherwise list entity/individual names below.

HDR, Inc.

**2. Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**

Check here if none, otherwise list entity/individual names below.

GRW, Inc.

**3. Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**

Check here if none, otherwise list entity/individual names below.

Joseph E. Bird

Signature: 

Date Signed: 12-8-2017

**Notary Verification**

State of West Virginia, County of Marion:

I, Amanda M. Sutphin, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 8<sup>th</sup> day of December, 2017.

  
Notary Public's



Official Seal  
Notary Public, State of West Virginia  
Amanda M. Sutphin  
Chapman Technical Group  
200 Sixth Ave.  
St. Albans, WV 25177  
My Commission Expires April 17, 2022

**To be completed by State Agency:**

Date Received by State Agency: \_\_\_\_\_

Date submitted to Ethics Commission: \_\_\_\_\_

Governmental agency submitting Disclosure: \_\_\_\_\_

**GENERAL TERMS AND CONDITIONS:  
West Virginia Division of Natural Resources  
Agency Delegated Procurements Over \$25,000**

**ADDENDUM ACKNOWLEDGEMENT FORM  
SOLICITATION NO.:**

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:  
(Check the box next to each addendum received)

- |   |  |
|---|--|
| <input type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Chapman Technical Group

Company

  
Authorized Signature

12-8-2017  
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

## **Table of Contents**

*Section 1.0 - Overview of Chapman Technical Group and HDR*

*Section 2.0 - Project Approach*

*Section 3.0 - Relevant Experience*

*Section 4.0 - Project Team*

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## COMPANY OVERVIEW & AWARDS



Established in 1984, Chapman Technical Group has steadily grown into a diverse firm of professionals, many of whom were educated in West Virginia colleges and universities. We have achieved an outstanding reputation for developing high-quality projects, while meeting schedules and budgets.

In 2013, Chapman Technical Group was acquired by the Lexington, Kentucky based A/E firm of GRW, allowing us to provide a wider range of services while expanding our resources. Now, in addition to our offices in St. Albans, Buckhannon, and Martinsburg, West Virginia, as part of the GRW family, we also work in Kentucky, Ohio, Tennessee, and Indiana.

Our architectural group not only designs new buildings from the ground up, but also specializes in renovations and historic restoration projects. Our award-winning landscape architects provide master planning, as well as detailed site design for parks and public spaces projects.

In addition to our building studio, our engineering support staff gives us the ability to meet almost any challenge a project may present. All of our mechanical, electrical, plumbing engineering is provided in-house, and our civil engineers work with our landscape architects to provide site designs that are functional while achieving a high level of aesthetics.

Water and sewer system design is accomplished by our environmental engineers, and when on-site wastewater treatment is required, we can do it.

Working with our airport group, we can provide full airport design services, from runway and lighting design, to hangars and terminal buildings.

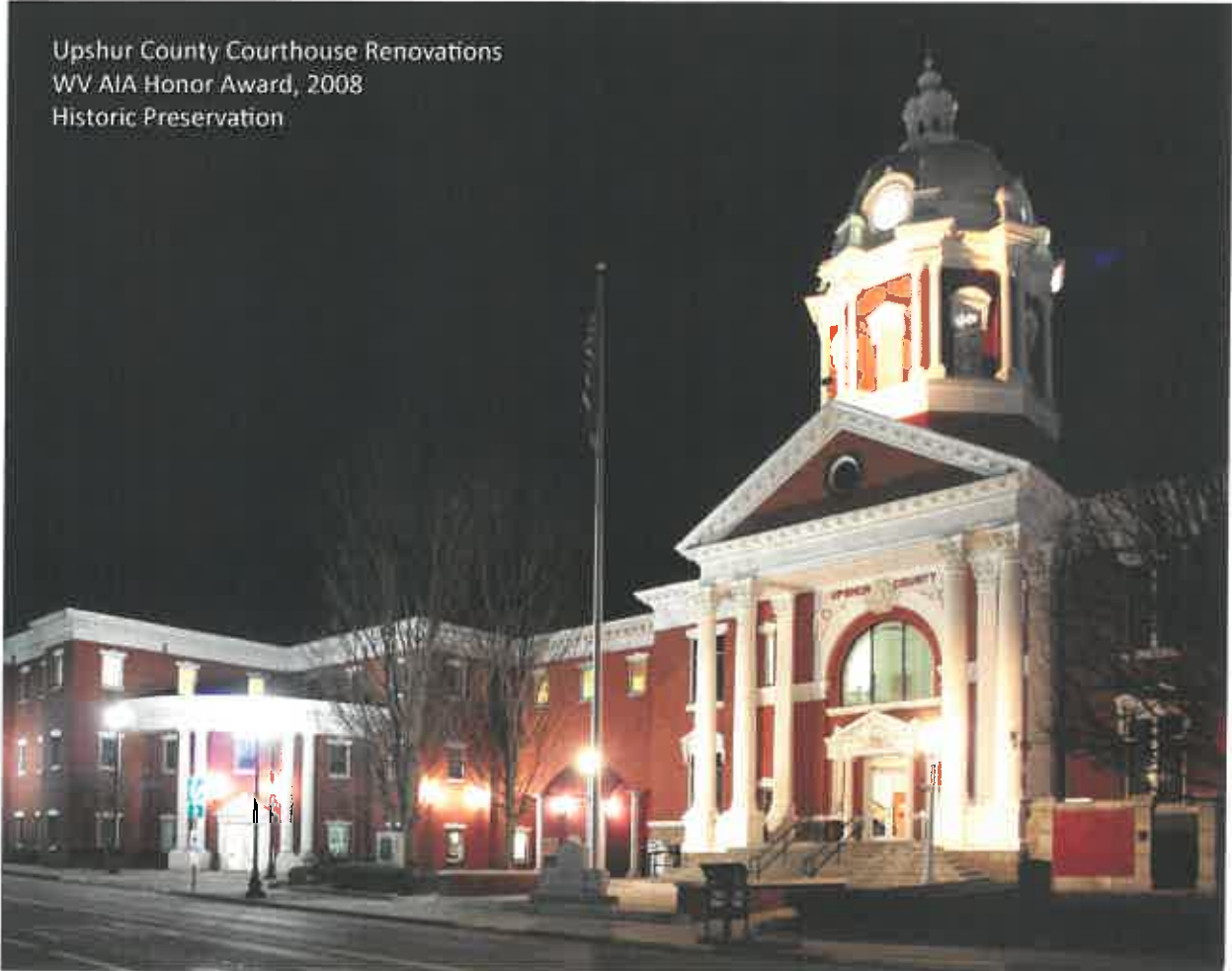
# COMPANY OVERVIEW & AWARDS



## COMPANY OVERVIEW & AWARDS



Upshur County Courthouse Renovations  
WV AIA Honor Award, 2008  
Historic Preservation



# COMPANY OVERVIEW & AWARDS



Upper Big Branch Miners Memorial  
WV ASLA Honor Award, 2012



Nuttallburg Historic Mining Complex  
WV ASLA Merit Award, 2012

## HDR Quick Facts



For over a  
**100 years,**  
we've partnered with our  
clients to push boundaries  
and shape communities



With **10,000 professionals**  
in more than **225 offices**  
around the world we **think**  
**global and act local.**



We've completed projects  
in all **50 states** and more  
than **60 countries**, always  
following through for  
our clients and holding  
ourselves accountable

We're consistently **ranked as an**  
**industry leader** by Engineering  
News-Record. Here are our  
2016-2017 rankings.



**#8**  
Top 500 Design  
Firms



**#6**  
Top 20 in  
Water Supply



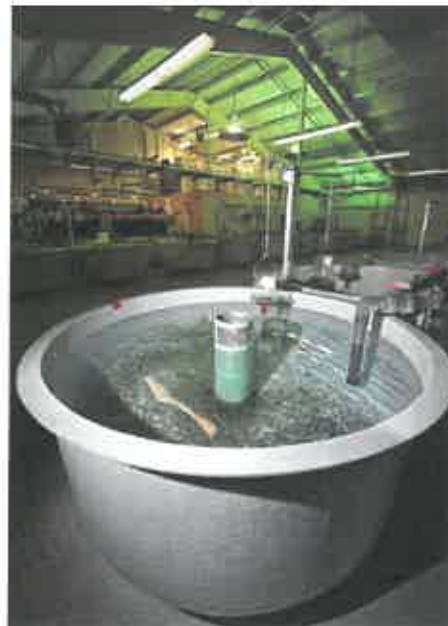
**#6**  
Top 20 in Water



**#2**  
Top 10 in  
Environmental  
Science



**#11**  
Top 15 Site  
Assessment/  
Compliance



# Our Story

Together, anything is possible

At HDR, we specialize in engineering, architecture, environmental and construction services. While we are most well-known for adding beauty and structure to communities through smart high performance infrastructure, we provide much more than that. We create an unshakable foundation for progress because our multidisciplinary teams include scientists, economists, builders, analysts, and artists.

As a global leader in consulting, we have the resources, international reach, and depth of experience and know-how to help our clients achieve success. With offices around the globe, we can handle an ever-reaching span of fisheries resources and aquatic organisms/habitat needs from site studies and selection to public outreach, facility design and infrastructure development, from startup and operations through project closeout

We combine local knowledge and delivery capabilities—understanding local regulations, rules, operating environment and geography—with the resources and reliability of a global firm. We can integrate with our client's team throughout the fisheries facility development to increase project performance, manage costs and increase efficiencies to deliver optimized operations and greater outcome predictability.

Our employees, working in 225 locations around the world, push open the doors to what's possible each and every day.

# Solutions for Fisheries in a Changing Environment

Fish and aquatic resources provide important ecological, economic, and social benefits. Today's environmental trends stress our aquatic habitats, diversity, and survivability requiring an increased action to preserve these natural resources.

We offer distinctive fisheries science and design services backed by the strength of a full-service consulting firm. From modernization of aging facilities to designing state-of-the-art hatcheries and managing fish passage issues, we offer award-winning services in fisheries and aquatic resource engineering.

Our services include habitat assessments, production and research facilities, ecosystem restoration, and design of fish passage structures, and screen diversions and intakes. We work to balance community and economic needs with conservation and sustainability of natural resources, including incorporating advanced water conservation strategies into our design services.

Our comprehensive fisheries program is represented in the following categories:

- **Fisheries Design Center**
- **Fisheries Ecohydraulics**
- **Fisheries Science**



## Fisheries Design Center

Led by industry experts, our Fisheries Design Center (FDC) is home to a focused group of professionals who operate as a single source to provide a range of services, from project planning to tailored best management practices, quality assurance programs, sustainability, energy conservation, water reuse, and CAD services.

Fisheries biology and engineering come together as we enhance natural resources by designing facilities to blend with the local landscape. We incorporate sustainable design features as appropriate, such as maximizing energy conservation, recirculation aquaculture systems (RAS), and updated fish culture techniques, to enhance stocks of fish and shellfish, including freshwater and marine species, crustaceans, amphibians, reptiles and freshwater mussels, in the natural environment.

We offer experience with restoration, conservation and production facilities, threatened and endangered (T&E) species refugia, wet labs and research

facilities, and captive broodstock facilities. Biosecurity control, water treatment, recirculation systems, and effluent treatment systems are integrated into our projects.

### AUGMENTATION, RESTORATION AND CONSERVATION FACILITIES

We provide the specialized services required for planning, analysis, design, construction and operation of modern fish hatcheries, fisheries resource enhancement facilities, refugia for T&E species, and production for augmentation and/or supplementation of wild stocks, aquatic animal laboratories, visitor centers and public aquaria facilities.

We have seen certain commonalities with our facility designs becoming more prevalent in the industry. These commonalities include:

- Biosecurity and sustainability
- Use of RAS
- Increased quality of water discharge
- Use of information technology in recording and monitoring
- Controls for water quality conditions
- Efficient use of site and interior space

- Reducing operation and maintenance costs
- Facilitating stakeholder groups

Our staff are familiar with the latest extensive and intensive culture technology for warm, cool and cold-water fish production and can provide comprehensive detailed solutions to aquaculture facility design problems.

### THREATENED AND ENDANGERED SPECIES REFUGIA

We are the nation's leading design firm of refugia habitats for threatened and endangered species. Our experience focuses on the uniqueness of each species of concern and the required design elements that will make a successful rearing/holding environment. Our projects include specialized refugia for spawning, incubation, grow-out and maturation and holding of fish, shellfish, amphibians, insects and aquatic plants.

These facilities may incorporate unique operational features to re-create environmental conditions that are found in their natural environment.

Features can include diurnal temperature fluctuations, flows and depths matching the natural hydrograph, special water quality conditions, substrate, and other habitat features necessary to maintain environmental and genetic integrity.





## WET LABORATORIES AND RESEARCH FACILITIES

We design fisheries laboratory and research facilities to meet a wide variety of biological and wet chemistry applications. Our designs take into account biosecurity, multiple rearing units, environmental controls for air temperature, light, vibration, airborne contaminants, and a secure and treated, if necessary, high-quality rearing water supply. Emergency backup provisions are essential for these life support systems.

Because we understand the biological needs of aquatic species, we provide facility design specifically capable of meeting the temperature and water quality life-stage requirements of aquatic species anticipated to be cultured in the facility. We have direct applied experience in aquatic animal metabolic by-product modeling, treatment of facility effluent streams, therapeutic chemical treatment, and control of biosecurity and pathogen escapement from facilities, and will be able to address effluent treatment needs. Research facilities may incorporate

components such as incubators, sinks, fume hoods, treated water supplies, instrumentation, and data acquisition systems. Other specialized instrumentation systems, such as atomic absorption and bacteriological laminar flow hoods, can also be incorporated.

## CAPTIVE BROODSTOCK

The capture, holding, sorting and/or production of broodstock requires design elements that safeguard the genetic integrity of the program and health of the targeted species.

Facilities can vary in design based upon water elevation, flows and river conditions. These facilities include temporary and permanent barriers, lift facilities and fish ladders. Short- and long-term holding facilities can include water-to-water transfers, anesthesia systems, and prophylactic treatments, as well as sorting for species, sex, and maturation development.

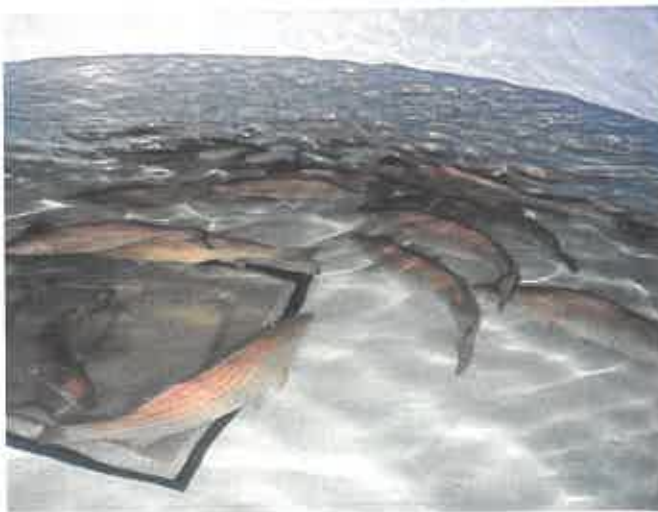
Spawning often involves a facility design that allows for efficient manipulation of elements such as photo-period, temperature and even the use of hormone injection. Additionally, the design includes flexibility to allow areas for anesthetizing and transport.

Broodstock units are sized to allow the program to maintain operations without sacrificing the fish quality. Stocking densities are analyzed by species to provide the appropriate spatial and aquatic environment. This includes number of fish per volume of tank, water flow, treatment and biosecurity measures.

## WATER REUSE AND RECIRCULATION SYSTEMS

Water reuse and recirculation systems describe a scenario where a percentage of water from rearing operations is pumped back to those rearing operations after certain treatments are applied to the used water supply. Two aspects of recirculation aquaculture system (RAS) design include the engineering or process components and the biological or species requirements.

Successful projects must address both aspects. RAS strategies utilize engineered technology to allow for greater control over the rearing environment, provide biosecurity, and enhance waste management. When incorporated correctly, this can have a reduced impact on the environment by requiring less first use water and a more advanced waste control. Our experience with RAS spans projects in multiple climate types where controlled indoor environments are critical to the success of the facility.





William Jack Hernandez, Project Manager, Monterey, Alaska

**MASTER PLANS, SITE AND FEASIBILITY STUDIES**

Utilizing existing fish production data and projected future fish production needs, we complete a quantitative biological/engineering (bioprogramming) analysis to detail current capability and potential future production for existing facilities and determine the design requirements for improvements or new facilities.

Studies of existing facilities include analysis of water supplies, fish rearing units and systems, buildings, support systems, utilities, effluent treatment systems, staffing, fish stocking and operational costs. The document provides a prioritized list of needed facility improvements and cost estimates for the recommended

improvements to meet current and future propagation goals.

The evaluation of a potential new facility typically includes water requirements, land acreage needs, statewide location, design, construction and operational cost range. We are able to provide the required specialized services, including field investigations, data collection, and analysis, to recommend how to meet your goals and requirements.

**SCREENED DIVERSIONS AND INTAKES**

Our expertise spans engineering, river mechanics, fish biology, agency coordination, and construction. We have a broad perspective as well as an in-depth knowledge of potential risks that can affect diversion and

intake design, construction implementation, and subsequent operation.

Design considerations include reviewing:

- Behavioral response to hydraulic conditions (sweeping flows and approach velocity)
- Weather conditions (wind, flooding); river stage/
- flow relationships
- Seasonal operation variability; potential for sediment, debris and frazil ice problems
- Safe and effective downstream bypass of juvenile salmonids
- Resident fish populations; potential for creating predation opportunity
- Remote monitoring



# Project Approach

The design of the improvements and upgrades to the Bowden Fish Hatchery will involve varying design disciplines including civil engineering, environmental engineering, mechanical engineering, electrical engineering, structural engineering and architecture, all guided by the science and biology associated with fish hatchery and aquaculture. It will be collaborative and interactive process involving the West Virginia Division of Natural Resources (WV DNR), scientists and biologists, and design professionals, with the objective of providing improvements and upgrades that are practical, cost-effective, and have long-term value.

The following is a general outline of the process that would be followed in the development of the project.

## Understanding Existing Conditions

A thorough understanding of the conditions of the fish hatchery and how those conditions affect the operations of the hatchery are imperative to developing a plan for improvements. We will review the study completed by HDR with WV DNR personnel and reassess the recommendations made at the time, incorporating modifications as required due to changing physical conditions of the hatchery, as well as operational requirements (see list at right).

## First Thoughts

Following the facility reassessment, we'll work with you and begin to develop a plan of action to meet the goals and objectives of WV DNR. We'll also start to update opinions of construction costs so that we can begin to prioritize your needs and identify any special issues that may affect the project. In short, we'll work with you to determine what aspects of the hatchery are most important to its continued operation, and what needs to be done to ensure that the hatchery can operate effectively and efficiently for years to come.

## Technical Design

Once specific needs and priorities are determined, we'll start to move forward with the detailed design. We'll start to look at the specifics of everything from water supply, fish facilities, buildings, and infrastructure systems. At this stage of the project, most of the major decisions will be made and we'll begin working on how it all goes together. Our opinions of construction cost will be refined and we'll likely begin to think about alternate bid items to ensure your project remains within budget. This is one of the more critical phases of the project and we will work with you to evaluate all of your options. By the time this phase is complete, you will have made 95 percent of the decisions that need to be made.

## Aspects of the hatchery that will be reviewed include:

- Aquaculture Water Supply
- Water Collection and Distribution
- Water Quality
- Water Treatment
- Indoor Rearing Units
- Egg Incubation
- Indoor Nursery Rearing Units
- Outdoor Raceways
- Ponds
- Predation Control
- Hatchery and Office Building
- Feed Storage and Nursery Building
- Shop and Vehicle Storage Building
- Storage Buildings
- Visitor Facility
- Residences
- Domestic Water/Wastewater Systems
- Roads and Parking
- Fencing and Security Lighting
- Site Drainage and Flooding
- Aquaculture Wastewater
- Electrical Power
- Telephone and Internet Service
- Fuel Systems
- Instrumentation and Alarm Systems
- Emergency Power
- Public Visitation Information and Education Services

### **Construction Documents**

At this phase of the project we're working out the smallest details and writing specifications for the contractor to use in construction. Most of the decisions you will need to make at this point will be minor. We'll fine-tune the opinion of construction costs and wouldn't expect any surprises. We will finalize the bidding strategy and make any adjustments in alternate bid items that we feel might be prudent. Once the project is reviewed by the appropriate entities, we'll be ready for bidding.

### **Bidding and Construction**

When we get approval to bid, we'll assist you in plan distribution, conduct a pre-bid conference, answer bidder questions and issue addenda, assist you in the receipt of bids, evaluate the bids, and make a recommendation regarding the award of the contract. When a responsible bidder is determined, we will assist in contract preparation and conduct a pre-construction conference.

Through construction we will endeavor to ensure that the project is constructed in conformance with the plans and specifications. It is common on renovation projects that unknown conditions are discovered during construction. It should also be expected that WV DNR personnel involved in the operation of the hatchery will begin to understand in more detail the improvements being constructed and may have additional thoughts about the project. We will work with you and the contractors to minimize the impact of these field changes as they occur.

Our construction phase services will include conducting progress meetings, reviewing submittals, observing work constructed, processing pay applications, responding to contractor questions, processing change orders, and assisting with project closeout documentation. We will provide periodic construction observation to coincide with project progress meetings, and can offer resident construction observation services if so desired. We can also assist with start-up of systems, commissioning, and training if so desired.

And as you know from our performance on past projects, we are committed to helping you develop a successful project from beginning to end. As one of the trusted partners of WV DNR, we will be there when you need us.



# ARCHITECTURE



## WV Division of Natural Resources

### Mason County Fish Hatchery

324 Fourth Avenue

South Charleston, West Virginia



*Above: The Mason County Fish Hatchery building houses fish rearing facilities as part of WVDNR's hatchery operations at the Robert C. Byrd Locks and Dam. Right: Piping manifolds will distribute both well water and reservoir water to a variety of fish tanks.*



Located at the Robert C. Byrd Locks and Dam at Apple Grove, West Virginia, the Mason County fish hatchery building is the final component to the hatchery complex that also includes a series of fish rearing ponds and a reservoir to supply the ponds. The project also included the design and construction of two residences to be used by hatchery personnel.

The 9,200 square-foot fish hatchery building is a masonry and steel structure housing the actual hatching components, as well as offices and other support facilities. More than half of the building is open space to accommodate the fish hatching egg rack and a variety of rearing tanks that hold the fish until they are mature enough to be transferred to ponds. The tanks are fed from either reservoir water or directly from well water which first passes through a degassing head tank. As water flows continuously through the tanks from an overhead distribution system, it is collected in a series of trench drains in the hatchery floor and eventually makes its way back to the Ohio River.

The hatchery also includes an office, a bunk room and kitchen for seasonal employees, a brine/shrimp room, and storage and maintenance garages. A mezzanine above the office area provides for additional storage.

# WASTEWATER ENGINEERING



**Division of Natural Resources**  
**Spring Run Fish Hatchery**  
**Wastewater System Improvements**  
Building 3, Room 816  
1900 Kanawha Boulevard, East  
Charleston, West Virginia 25305

Chapman Technical Group provided design and construction observation services for the Spring Run Fish Hatchery Project that was completed in 2007. The project consisted of one 25-foot diameter batch clarifier; one 20-foot diameter sludge holding tank; a sludge transfer pump station with two 350 GPM self priming, centrifugal solids handling pumps; a new effluent composite sampling and flow measurement system; a new outfall structure; 860 linear feet of 12", 15" and 18" HDPE/DIP gravity sewer pipe; 1,000 linear feet of 8", 10", 12" and 16" DIP waterlines; (27) 8", 10" 12" and 16" gate valves; 13 pre-cast concrete manholes; structural crack repairs to existing raceways; piping modifications to existing raceways; removal of two existing concrete rearing ponds and associated electrical work; three new 2-pass concrete raceways and associated piping; and site work and access road improvements.





# WASTEWATER ENGINEERING



## WV DNR Camp Creek State Park Wastewater System Improvements

The West Virginia Division of Natural Resources, Park and Recreation Department, retained Chapman Technical Group to provide design and construction phase services for a wastewater collection and treatment system at Camp Creek State Park in Mercer County, West Virginia. The existing facilities were served with septic tanks and leach fields which were failing due to shallow rock, a high groundwater table, and overloading during seasonal peak flows. The initial phase of the project was completed in July of 2010 and included a 6,400 GPD re-circulating sand filter wastewater treatment plant with UV disinfection and a grinder pump station which serves the superintendent's residence as well as the park's RV dump station. The treatment plant was constructed on engineered fill to elevate it above the historical high water level. Both the treatment plant and pump station were designed to facilitate future expansions of the wastewater system to pick up other park facilities when funding becomes available.



**PROJECT DETAILS**

**Project Cost:** \$3,200,000

**Key Features:**

- energy and resource conservation
- reuse water supply
- civil / site design
- structural design
- mechanical design
- electrical design
- fisheries biology
- design development
- construction documents
- construction administration

**Completion Date:** 2016

**Species:** Trout

## North Carolina Wildlife Resources Commission Armstrong State Fish Hatchery Renovation

*Marion, North Carolina*

HDR provided planning, design, and construction phase services for renovation of the Armstrong State Fish Hatchery. The project involved the total renovation of both the upper and lower raceway complexes.

The project required the demolition and removal of concrete raceways, concrete circular tanks, and all related water supply and drainage piping systems. Demolition also included two existing site buildings, site pavement, and reuse water pumping system. The project included abandonment of two existing wells, relocation of a bulk liquid oxygen tank, and recovery of two existing fuel tanks with spill containment.

New cast-in-place reinforced concrete raceways were constructed and configured to utilize serial gravity reuse water supply system. Each raceway was equipped with a water inlet area and LHO (low head oxygenation unit) at the inlet (upper end) and a solids quiescent zone (QZ) for fecal solids collection and cleaning and an overflow water collection channel. Pumped recirculation of used water to the top of raceway series is now available to augment Armstrong Creek flows during periods of drought. The project included all related water supply, oxygen gas, drainage and pumped recirculation water piping, related pumped recirculation water treatment components, a new portable diesel electrical generator, and related electrical components of the emergency power system.



## PROJECT DETAILS

### Project Cost:

Thompson: Ongoing  
 Oden: \$9,500,000  
 Platte River: \$10,000,000

### Key Features:

- energy and resource conservation
- reuse water supply
- civil / site design
- structural design
- mechanical design
- electrical design
- fisheries biology
- design development
- construction documents
- construction administration

### Completion Date:

Thompson: Ongoing  
 Oden: 2002  
 Platte River: 2004

### Species:

Thompson: Walleye, Muskellunge  
 Oden: Rainbow trout, Brown trout  
 Platte River: Coho, Chinook Salmon

## Michigan Department of Natural Resources

### Renovations at Oden, Platte River, Thompson State Fish Hatcheries

*Various, Michigan*

HDR provided planning, design, and construction phase services for renovations at several Michigan Department of Natural Resources fish hatcheries.

**Thompson SFH:** HDR is completing the preliminary design phase of a project to enhance steelhead rearing and add designated coolwater rearing at Thompson. The proposed improvements include new well water supply, lined ponds, harvest kettles, pond aeration capacity, security fencing, predator exclusion netting and security lighting. A proposed cool water production building is to be equipped with a biosecure egg receiving room, incubation area, rearing tanks, HVAC support, staff locker room/restroom and process water heating and chilling capability.

**Oden SFH:** Major components of the complete modernization of this coldwater facility include: a 16,870 SF main hatchery building; an 18,712 SF broodstock building; three 8,235 SF each raceway buildings; a 1,365 SF isolation building; five new 1,000 gpm/each high capacity wells; two manufactured residences; site work; paving; clarifier; and sludge storage and detention pond. Design also included large-scale reuse water microscreening and reuse water pumping system. The new Oden SFH contains concrete raceway outdoor rearing areas for later rearing constructed with predator control and light control structures. Each raceway receives up to one 1,000 gpm

of flow. When operating at full capacity the hatchery utilizes approximately 4,000 gallons of water per minute. Before water is used anywhere in the new facility, it has harmful dissolved gases removed and oxygen added. A reuse water system is being utilized.

**Platte River SFH:** Following a series of required modifications to phosphorus discharges, MI DNR worked with HDR staff on the design of an enhanced facility to replace the existing borrow ponds in an effort to provide a system that more efficiently manages fish waste. The Platte River Hatchery was renovated, while continuing in operation, with a state-of-the-art solids capture system designed to reduce loadings to the Platte River. The project involved demolition of existing infrastructure, design and construction a new infrastructure and the use of cutting edge design technology that captures solids on a continuous basis from newly designed raceways using inverted baffles and microscreening. Each pass of water through the series of raceways is collected and sent to disc microscreens for filtration of solids before being reused in the next series of raceways. Collected waste is treated in a clarifier and associated sludge storage tank. The addition of chemical coagulates improves the removal of phosphorous. The enhancements to the facility were completed while portions of the facility remained in operation.



#### PROJECT DETAILS

**Project Cost:** \$4,500,000

#### Key Features:

- new buildings
- weir fish ladder
- fish way
- visitor interpretation
- civil / site design
- structural / architectural design
- mechanical design
- electrical design
- design development
- construction documents
- construction administration

**Completion Date:** 2008

**Species:** rainbow and brown trout

## Missouri Department of Conservation

### Shepherd of the Hills Fish Hatchery Expansion

*Branson, Missouri*

HDR provided engineering design for the \$4.5 million facility expansion to raise a wild strain of brown trout and make needed improvements to the existing rainbow trout facility. The project included the addition of a new rearing facility, production water well, concrete head tank, production raceways broodstock holding raceways, and a combination natural fish way /pool and weir fish ladder, (including a natural area for visitor interpretation). Also included in the project were intermediate and final rearing units, new facility valving across the existing facility and an improved oxygen and aeration system for the rearing units utilizing low head oxygenators. Electrical design for the facility included lighting, power distribution, automated VFD control of new well, and aquaculture process monitoring and alarm system.

Included in the Shepherd of the Hills brown trout hatchery expansion project was a brood

stock collection facility and fish ladder. A combination pool and weir, and natural channel was designed to allow returning brown trout to ascend from Lake Taneycomo to the brown trout facility for spawning. Adult trout will utilize the ladder during fall spawning. Fish leaving Lake Taneycomo will enter an existing natural channel area for a short ascent towards the fish ladder entrance. The first run of ladder is a pool and weir structure that allows the fish to ascend approximately seven vertical feet from entrance to termination. The pool and weir section is a concrete structure that has aluminum baffles that are capable of being removed for cleaning. The second portion of the ladder is a 150 long meandering natural channel that incorporates native feature and is accessible to visitors. The final ascent into the spawning area is accomplished by another short pool and weir structure. Brown trout will ascend the newly constructed pool and weir style fish ladder and terminate their ascent in the collection raceway.



#### PROJECT DETAILS

##### Project Cost:

Wild Rose: \$28,000,000

Thompson: \$976,000

Oehmcke: \$2,845,000

##### Key Features:

- energy and resource conservation
- reuse water supply
- civil / site design
- structural design
- mechanical design
- electrical design
- fisheries biology
- design development
- construction documents
- construction administration

##### Completion Date:

Wild Rose: 2012

Thompson: 2017

Oehmcke: 2017

##### Species:

Wild Rose: Chinook Salmon, Brown Trout, Northern Pike, Muskellunge, Walleye, Suckers, and Lake Sturgeon

Thompson: Walleye

Oehmcke: Walleye

## Wisconsin Department of Natural Resources

### Renovations at Wild Rose, Thompson, Oehmcke State Fish Hatcheries

*Various, Wisconsin*

HDR provided planning, design, and construction phase services for renovations at several Wisconsin Department of Natural Resources fish hatcheries.

**Wild Rose SFH:** HDR was retained for the expansion and renovation of the Wild Rose State Fish Hatchery. Coldwater facility construction included new covered intensive rearing systems, a 14,000 SF hatchery building, four 5,000 SF covered raceway buildings, an 8,000 SF broodstock building, modern effluent treatment system, and a visitor center. The coolwater / warmwater facility construction included a modern lined pond complex and a 30,000 SF intensive recirculation (RAS-based) indoor rearing building. This project also includes 14 lined production ponds and effluent treatment system. Water is pumped to meet exact fish culture program requirements to maximize energy use and to conserve groundwater resources. Water is treated, conditioned and reused four times in the complex before being microscreened and ultra-violet (UV)

disinfected for a fifth use in the coolwater/ warmwater facility located across Highway 12. Flowing by gravity (not with costly pumps), the recovered water is used to operate the production building, fill six ½-acre fish rearing ponds and to provide a water source for a solar pond filling. The facility also uses state-of-the-art fish hatchery effluent treatment technology and a modern fiber optic based programmable logic controller (PLC) instrumentation and alarm system that enables operators to maintain constant observation 24 hours a day.

**Thompson SFH:** HDR provided engineering services to improve the Thompson facility to increase Walleye production.

**Oehmcke SFH:** HDR provided engineering services for the renovation of the Madeline Lake intake box and intake screens and to construct a new recirculation equipment building. The building houses a recirculation pump station, ultraviolet disinfection system, microscreen system and headtank system. This building also provides coolwater rearing space.

# WASTEWATER ENGINEERING



**City of Chesapeake**  
**Wastewater System Improvements**  
12404 MacCorkle Avenue  
Chesapeake, West Virginia 25315

Provided Phase I and II Sanitary Sewer Evaluation Surveys (SSES), including smoke testing, dye testing, flow monitoring, internal video inspection and design and construction observation services for recommended rehabilitation within the existing wastewater collection system. Also included the renovation of five existing wastewater pumping stations, installation of storm sewer lines to separate combined sewers, and re-mapping of the entire existing sanitary sewer system. Entire project was funded by a HUD Small Cities Block Grant from the West Virginia Development Office. As the project cost came in well below the construction budget, Chapman Technical Group was authorized to prepare construction documents for the subsequent renovation of City Hall to provide a handicap accessible restroom for ADA compliance.

# WASTEWATER ENGINEERING



## Corporation of Shepherdstown Wastewater Treatment Plant

Post Office Box 248  
Shepherdstown, West Virginia

Chapman Technical Group provided design and construction observation services for Wastewater System Improvements project consisting of the renovation and upgrade of the existing wastewater treatment plant in order to meet growth and nutrient removal initiated by the Chesapeake Bay Program. The treatment capacity will increase from 0.40 MGD to 0.80 MGD. The upgrade/renovation consists of a new headworks facility featuring one (1) 3 mm coarse screen, two (2) 2 mm fine screens, screening wash compactor, 2.5 MGD grit removal system, all housed in a 1,120SF metal building; 800,000 GPD Membrane Bioreactor (MBR) treatment system consisting of converting the existing aeration basins to bioreactor treatment basins, construction of new membrane treatment tanks and MBR equipment housed in a 5,100SF pre-engineered metal building; new aerobic digester; new UV disinfection unit; non-potable water system; chemical feed equipment; renovate existing plant lift station; relocate existing rotary fan press; new sludge conveying equipment; improvements to the existing Control Building and demolition of existing aerobic digester, break room building, sludge drying beds, existing secondary clarifiers, existing sludge pump building and chlorine contact tank.



# WATER ENGINEERING TREATMENT



## City of Belington

### Water Treatment Plant

Post Office Box 926

Belington, West Virginia



Chapman Technical Group provided design and construction observation services for the City of Belington's new water treatment plant. The new water treatment plant was designed for an initial capacity of 700 GPM utilizing two package treatment units, with provisions to accommodate a third unit for expansion to 1,050 GPM in the future. The treatment process consists of Stage I and II raw water intake structures, 50-foot diameter pre-sedimentation basin with a detention time of four hours; chemical injection building; two 350 GPM USFilter Aquarius AQ-150B aluminum water treatment units with two-stage flocculation, tube settlers and

mixed media filters; two 1,050 GPM backwash pumps; two 700 GPM high service pumps; chemical feed building; 197,260 gallon below ground clearwell and 55,000 gallon below ground backwash holding tank. The treatment units are housed in a 5,100 square-foot pre-engineered metal building along with the laboratory, office, kitchen, bathroom, electrical room, high service and backwash pump rooms and pipe gallery. The plant also includes a plant-wide SCADA system that also monitors the City's two water storage tanks. The total construction cost for the water treatment plant was \$3,000,000.





# WATER ENGINEERING TREATMENT



## City of Elkins

### Water System Improvements

401 Davis Avenue

Elkins, West Virginia 26241

Chapman Technical Group provided design and construction phase services for a \$37 million water system improvements project which included a new 6.0 MGD water treatment plant featuring membrane filtration. The membranes are preceded by a conventional pre-treatment system consisting of an in-line static mixer, 3-stage tapered flocculation, and inclined plate sedimentation basins. The plant also includes an emergency generator, a backwash tank equipped with two backwash recovery system filters, a wastewater process tank equipped with a rate of flow control valve, and a new 3.0 MG baffled precast prestressed concrete tank serving as the clearwell for the plant.

The project also consisted of a new raw water intake with two 500 HP vertical turbine pumps and intake screens with air backwash system and emergency generator. Also included was over 3,000 LF of 24" DIP raw water line, and nearly \$5 million of distribution system improvements to improve water quality and reduce unaccounted for water. Three booster stations were also part of the project in order to overcome low pressure problems to one area of the City's system as well as to provide service to two resale customers.



# WATER ENGINEERING TREATMENT



*New 150 HP VT Pumps*



*Old 75 HP VT Pumps*

## **Corporation of Shepherdstown High Service Pump Replacement**

Post Office Box 248  
Shepherdstown, West Virginia

Chapman Technical Group provided design and construction observation services for High Service Pump Replacement project. The project consists of replacing the two (2) 800 gpm vertical turbine pumps with two (2) new 800 gpm vertical pumps with an ultimate capacity of 1,200 gpm. The pumps were replaced in order to fill the elevated water storage tanks.



*New 400 Amp Safety Switches*

# WATER ENGINEERING TREATMENT



## City of Lewisburg Public Works

### Water Treatment Plant

531 Feamster Road  
Lewisburg, West Virginia

This is the first phase of replacing the City of Lewisburg's existing water treatment plant. This project consisted of the construction of a new 600,000 gallon factory-coated tank with clarification equipment and renovation of the City's existing concrete pre-sedimentation basin. The renovation of the pre-sed basin included concrete rehabilitation, construction of new walls to partition the basin, installation of horizontal flocculation equipment and stainless steel baffle walls, stainless steel plate settlers, sludge removal equipment and grating. This first phase will enable the City to meet the West Virginia Bureau of Public Health requirements of 30 minutes of flocculation and four hours of sedimentation. All piping associated with this first phase was sized to accommodate the new plants capacity of 4,000 GPM.



## Storm Water Projects



### Town of Davis Storm Water Project

P.O. Box 207  
Davis, WV 26260

Chapman Technical Group was retained by the Town of Davis to evaluate and make recommendations for correcting stormwater drainage problems within an isolated area of the Town. The project area lies on the eastern side of the Town, and generally consists of the area bounded by Second and Third Streets (east and west), and Blackwater and Thomas Avenues (north and south). Stormwater drainage within the project area ranged from non-existent to inadequate. The topography within the area is very flat, and the majority of the homes within this area lie below the elevation of streets and alleys causing stormwater within the area to pond in the resident's yards for long periods.

The project involved the installation of two (2) trunk stormwater lines in the alleys between Blackwater and Henry Avenues, and Henry and Thomas Avenues, along with the installation of small yard drains at each property for residents to connect downspouts, etc. to the new system.



**Barbour County Economic Development Authority**  
**Belington Multi-Tenant Business Incubator**  
Belington Industrial Park  
Belington, West Virginia

Chapman Technical Group assisted the Barbour County Economic Development Authority by providing design services and construction administration for the Belington Multi-Tenant Building located in the Belington Industrial Park. The Multi-Tenant Building is a 25,100 s.f. metal building which consists of three 8,300 s.f. tenant spaces, each with their own office core and bay spaces.



# ARCHITECTURE



*American Institute of Architects, Merit Award, 2010*



## WV DOT Division of Highways

### Burnsville Rest Area

Burnsville, West Virginia

The Burnsville Rest Areas are the first of the new standard rest areas to be built around the state for the West Virginia Department of Transportation. A dual-facility layout ensures that demand will be met for many years. Native materials, including smooth cut and rough stone, were used inside and out. Low maintenance but highly durable materials, such as the tern-coated stainless steel roof and the epoxy terrazzo floor, were used throughout. The design plays off of West Virginia imagery and

creates safe, warm, and welcoming spaces. Separate maintenance and vending buildings complement the main structures.

# ARCHITECTURE



## WV Division of Natural Resources

### Canaan Valley Resort State Park - Tube Park Lodge

Canaan Valley, West Virginia



Chapman Technical Group is leading a team of specialists in developing a wide range of improvements at the ski area of Canaan Valley Resort State Park. The upgrades include new facilities that will have a major impact on the resort's operations; others will be little-noticed but important improvements to the resort's infrastructure. A new tubing park will be developed and will feature a 12-lane tube run in excess of 800 feet long with a vertical drop of 90 feet. A new boardwalk conveyor will carry tubers back up the hill. A tubing lodge will feature a wood-burning fireplace, restrooms, and a concession stand for hot drinks, and an outdoor patio will include a wood-burning fire pit. A storage building will house tubes and snow grooming equipment. In the same area, a wobble clay shooting range will be developed as a seasonal activity. Another major improvement will be a new beginners slope and ski school area. This new slope will be easily accessible by beginning skiers and will include new snow guns

and lighting for night skiing. A boardwalk conveyor will carry skiers back to the head of the slope, enabling them to ski at their skill level as long as they want. The main ski lodge, the Bear Paw Lodge, is relatively new, but the older buildings at the base of the ski slopes will get a much-needed face lift. New wall and floor finishes, new furnishings, new lighting and upgrades to the heating and ventilation systems, will make the lodge buildings much more comfortable. The pub will likewise be upgraded with an expanded bar area. Outside, a new plaza with a fire pit will provide more options for outdoor seating. Important infrastructure improvements will include upgrades and major maintenance to the existing ski lifts; snow-making waterline repairs and upgrades; new snow guns; and major storm drainage improvements. A new waterline from the Canaan Valley golf course ponds will provide expanded snow-making capabilities.

# ARCHITECTURE



## WV Division of Natural Resources

### Chief Logan Cabins

1000 Conference Center Drive  
Logan, West Virginia

Chapman Technical Group was selected to provide the architectural, civil engineering, and landscape architectural design to construct 13 new cabins in the environmentally-sensitive Blackwater Falls State Park. The project also included site development and utility system upgrades. One of the goals in developing the project was to have as little environmental site impact as possible. A plan to cluster the cabins was developed that would minimize the footprint of the cabin development. As much as possible, the existing grade remained unchanged to preserve the natural vegetation. A natural planting plan was developed using indigenous or naturalized plant species, with a special effort made to provide habitat vegetation for endangered animal species in the area. As part of the project, a low-impact wastewater treatment plant was designed and will result in water clean enough to discharge into the natural waterways of the park. More than a mile of potable water line was also upgraded, which will benefit other areas of the park as well.





# ARCHITECTURE



## Pocahontas County Wellness Center

Marlinton, West Virginia

The Wellness Center was constructed adjacent to, but separate from, the existing Marlinton Elementary School. The Pocahontas County Board of Education provided the property in exchange for daytime use of the gymnasium, which the school did not have. The new construction is approximately 13,000 square feet and includes a middle-school size gym and basketball court; a wellness center; two multi-purpose rooms, one of which can be divided into two classroom size rooms with a folding, sound attenuating partition; a racquetball court; and a warming kitchen/concession stand.

The facility is configured with separate entries to allow use by the school and the public at all times of the day while limiting or prohibiting interaction of the various groups.





# Project Organization Chart

## WVDNR

### Project Manager

Joseph Bird, ASLA, CTG

### Hatchery Planning

Ken Ferjancic, HDR

### Hatchery Design

Matt Cochran, HDR

#### Site/Civil

Mike Johnson, PE, CTG  
Roger Kennedy, ASLA, CTG

#### Architecture

Tom Cloer, AIA, CTG  
Phill Warnock, AIA, CTG  
Patrick Daughton, AIA, HDR

#### Water/Wastewater

Greg Belcher, PE, CTG  
Amanda Sutphin, PE, CTG

#### Structural

David Hoy, PE, CTG  
Bruce Badley, PE, HDR

#### Survey

Jason Brown, CTG  
Jamie Driggs, CTG

#### Mechanical

Doug Cage, PE, CTG  
Monty Maynard, PE, LEED, CTG

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## Joseph E. Bird, ASLA

Vice President  
Project Officer



**Years of Experience:** 37  
**Years with Chapman:** 30

### Education

B.S., Landscape Architecture,  
1981, West Virginia University

### Registration

Landscape Architect: WV, KY

### Affiliations

WV Chapter, American Society of  
Landscape Architects

### Awards

Honor Award, WV ASLA  
Shrewsbury Street Development Plan

### Projects Include

St. Albans Streetscape Improvements  
(St. Albans, WV)

Robert C. Byrd Federal Courthouse  
Site Design (Beckley, WV)

VA Medical Center Healing Garden  
and Site Design (Huntington, WV)

Canaan Valley State Park Ski Facility  
Improvements (Canaan Valley, WV)

Lewisburg L & R Recreation Trail  
(Greenbrier County, WV)

Smith Street Streetscape Improvements  
(Charleston, WV)

Sixth Street Streetscape Improvements  
(Covington, KY)

## Qualifications

### Site Development

Site planning and project management for numerous projects throughout West Virginia ranging from small campus sites to large sites for commercial, government, industrial, and institutional development. Projects include military complexes, campuses, public housing developments and other public facilities.

### Parks and Recreation

Projects include swimming pools, bath-houses, cabins and support facilities for the West Virginia Division of Natural Resources and similar facilities for county and municipal park systems. Also involved in the design of facilities such as softball fields, fishing access facilities, recreation facilities for prisons, as well as passive recreation areas for public and private clients.

### Miscellaneous

Other project experience includes the urban planning and development, streetscape design, roadway and storm drainage projects, as well as the project management of numerous major architectural projects throughout West Virginia. His recent relevant project experience includes the design and/or management of major recreation projects including the Beech Fork State Park Campground Improvements; the Beech Fork State Park Cabin Project; the Beech Fork State Park Swimming Pool and Bathhouse; the Blackwater Falls Cabin Projects; the Canaan Valley Golf Course Drainage Improvements Project, and the Canaan Valley Ski Area Improvements Project.



## Kenneth P. Ferjancic

Water Fisheries Director, QAQC

Kenneth Ferjancic has spent more than 40 years in the planning design and operations of fish culture facilities and fisheries enhancement programs. Mr. Ferjancic is a national and regional expert on fisheries and the associated aquatic habitat and fisheries issues related to ESA solutions for water users and protection of fishery resources. He has guided projects requiring the siting biological design engineering operation and management of aquatic systems. Mr. Ferjancic's experience in the creation of habitat (marine and freshwater) includes simulated natural habitats for threatened and endangered species. His understanding of the biological and mechanical requirements of these systems provides the aptitude to evaluate habitats for creating semi-natural environments and implementing habitat restoration techniques.

### EDUCATION

Bachelor of Science,  
Fishery Sciences,  
University of Washington  
(UW), 1971

### PROFESSIONAL MEMBERSHIPS

American Fisheries  
Society

Aquacultural Engineering  
Society (AES)

Desert Fishes Council  
(DES)

Society for Conservation  
Biology

World Aquaculture  
Society

**INDUSTRY TENURE**  
46 years

**HDR TENURE**  
39 years

### RELEVANT EXPERIENCE

- **Wells Dam Hatchery Modernization** *Washington*
- **Front Royal Fish Hatchery Restoration** *Virginia*
- **Dunn Hatchery Improvements** *Nevada*
- **Devil's Hole Pupfish Refugium** *Nevada*
- **Big Springs Hatchery** *Utah*
- **Threatened and Endangered Species Hatchery** *Colorado*
- **Native Salmonid Conservation Facility** *Washington*
- **Pyramid Lake Fisheries** *Nevada*
- **Numana Hatchery Improvements** *Nevada*
- **Mainbay Hatchery** *Alaska*
- **San Joaquin Conservation Hatchery** *California*
- **Wahweap State Fish Hatchery Water Systems** *Utah*
- **Virginia Statewide Fish Hatchery Study** *Virginia*
- **William Jack Hernandez Sport Fish Hatchery** *Alaska*
- **Albuquerque Biological Park Wetland and Tingley Pond Restoration Project** *New Mexico*
- **Gallagher Hatchery Rehabilitation** *Nevada*
- **Lake Mead Hatchery Rehabilitation** *Nevada*
- **Los Lunas Silvery Minnow Refugium** *New Mexico*
- **Mantua Fish Hatchery Rehabilitation** *Utah*
- **Northeast Oregon Spring Chinook Hatchery** *Oregon*
- **Pioneer Park Hatchery** *Washington*
- **Rio Grande Silvery Minnow Sanctuary** *New Mexico*
- **Rock Lake Trout Rearing Station** *New Mexico*



## Matthew D. Cochran

Fisheries Biologist / Aquatic Ecologist

Matt provides biological and ecological services for fisheries and environmental restoration projects throughout the United States. His responsibilities include development of bioprograms associated with fish production including carrying capacity, species timing and growth rates. The bioprogramming involves modeling growth rates, flows, oxygen consumption carrying capacities and wastewater parameters. In addition, water balancing and fish production sequencing is provided to plan for the production of multiple species of fish. Matt also provides ecological computer modeling for aquatic and environmental design analysis and is knowledgeable in GIS and statistics. He has been involved in the design of water supply systems recirculating aquaculture systems and fish holding tanks for several aquaculture projects. Matt was project coordinator and principal writer for numerous facility studies, many of which included wetland fisheries, infrastructure, water quality, and environmental assessments.

### EDUCATION

Master of Science,  
Biology, University of  
Illinois at Springfield  
(UIS), 2007

Bachelor of Science,  
Environmental  
Sciences/Studies,  
Eastern Illinois University,  
1995

### INDUSTRY TENURE

22 years

### HDR TENURE

21 years

### RELEVANT EXPERIENCE

- **Wild Rose State Fish Hatchery Renovation** *Wisconsin*
- **Shepherd of the Hills Fish Hatchery Facility Expansion** *Missouri*
- **Armstrong SFH Renovation** *North Carolina*
- **Florida Bass Conservation Center** *Florida*
- **Art Oehmke State Fish Hatchery Water Supply Enhancement Project** *Wisconsin*
- **Coolwater Rearing Hatchery Improvements - Thompson State Fish Hatchery and Little Manistee Weir** *Michigan*
- **Emden State Fish Hatchery Renovations** *Maine*
- **Wells Dam Hatchery Modernization** *Washington*
- **Quinebaug Valley Hatchery Energy & Water Supply Operating Improvements** *Connecticut*
- **Richmond Hill Hatchery Building Renovation** *Georgia*
- **USGS Leetown Science Center - Biosafety Laboratory Level III Wet Lab Design National Fish Health Research Laboratory** *West Virginia*
- **Coursey Springs Fish Culture Station Renovations** *Virginia*
- **John D. Parker State Fish Hatchery** *Texas*
- **Front Royal Fish Hatchery Restoration** *Virginia*

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## Robert G. Belcher, P.E.

Vice President  
Project Officer



**Years of Experience:** 31  
**Years with Chapman:** 28

### Education

B.S., Civil Engineering, 1983,  
West Virginia University  
Institute of Technology

### Registration

Civil Engineer: WV, OH

### Affiliations

WV Water Environment Association  
Contractor's Association of WV  
WV American Water Works Association  
WV Society of Professional Engineers  
WV American Council of  
Engineering Companies  
WVUIT Civil Engineering Advisory Board  
WV Qualifications Based Selection Council

### Awards

George Warren Fuller Award, 2001

## Qualifications

### Water Systems

Design and project management for numerous water systems for both public and private water companies. Projects include new water treatment plants as large as 10 MGD, improvements to existing plants, water mains and distribution systems. Water storage projects include glass-lined steel tanks, welded high-strength steel tanks, and elevated pedestal tanks.

### Wastewater Systems

Design and project management for numerous wastewater systems throughout West Virginia. Projects include new, secondary and tertiary wastewater treatment plants as large as 4.5 MGD, improvements to existing plants, small-flow treatment plants, new and rehabilitation of wastewater collection systems, and facility plan updates.

### Miscellaneous

Design and project management for large highway and bridge projects, airport improvements projects, large stormwater management projects including assistance with MS4 compliance, as well as potable water and wastewater system design for site development projects throughout West Virginia.

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# Stephen M. Johnson, P.E.

## Civil/Environmental Group Manager



**Years of Experience:** 11  
**Years with Chapman:** 9

### Education

B.S., Civil Engineering, 2004,  
West Virginia University  
Institute of Technology

### Registration

Civil Engineer: WV, NC, VA

### Affiliations

Water Environment Association  
WV American Water Works Association  
WV & VA Rural Water Association  
Water for People

### Miscellaneous

NEC Certified, 2011  
SDI Certified SCUBA Diver

### Projects Include

Bluefield Sanitary Board  
Wastewater System Improvements  
(Bluefield, WV/VA)

St. Albans Water/Wastewater/Stormwater  
Improvements (St. Albans, WV)

Elkins Road PSD Water System Improvements  
(Elkins, WV)

Middle Creek Decentralized Wastewater  
System Improvements  
(Tazewell County, VA)

## Qualifications

### Water Systems

Overall experience includes planning, design, bidding, and construction administration/management of various public and private water system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes distribution systems, river crossings, horizontal directional drills, wells, raw water intakes, transmission lines, booster stations, treatment plants, ground and elevated water storage tank design, painting, and rehab, SCADA systems, computer modeling, treatment process evaluation, and problem troubleshooting in existing systems.

### Wastewater Systems

Overall experience includes comprehensive system master plans, design, bidding, construction administration and management of various public and private wastewater system projects throughout West Virginia, Virginia, and North Carolina. Specific project experience includes gravity and low-pressure collection systems, pump stations and force main transmission systems, treatment plant process evaluation and design, trenchless pipeline rehabilitation, bypass pump system design, odor and corrosion control, effluent infiltration ponds, decentralized and alternative on-site disposal systems, and SCADA systems.



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# Amanda M. Sutphin, P.E.

## Civil/Environmental Engineer



**Years of Experience:** 14  
**Years with Chapman:** 2

### Education

B.S., Civil Engineering, 2004,  
West Virginia University  
Institute of Technology

### Registration

Civil Engineer: WV, OH, PA, KY

### Projects Include

Town of East Bank  
Water Distribution System Extension/Re-  
placement and Construction of New Tank  
(East Bank, WV)

Town of New Haven  
Water Distribution System and Tank Re-  
placement  
(New Haven, WV)

West Virginia American Water  
1.0 MG Mt. Olive Water Storage Tank  
(Mt. Olive, WV)

Town of Mason  
Wastewater Collection Improvements  
Project  
Water Distribution System Improvements  
(Mason, WV)

Village of Cadiz  
North, South and Center Trunk Line Waste-  
water Improvements Project  
Old Steubenville Pike Water Extension  
Project  
(Cadiz, OH)

Village of Racine  
Water Distribution System Replacement  
Project - Phase I & II  
Well Rehabilitation and Replacement  
Project  
Water Treatment Plant Improvements  
(Racine, OH)

## Qualifications

### Water Systems

Overall experience includes planning, design, bidding, and construction administration/management of various public and private water system projects throughout West Virginia and Ohio. Specific project experience includes distribution systems, river crossings, horizontal directional drills, wells, raw water intakes, transmission lines, booster stations, treatment plants, water storage tank design, painting, rehab, SCADA systems, computer modeling, and problem troubleshooting in existing systems.

### Wastewater Systems

Overall experience includes comprehensive system master plans, design, bidding, construction administration and management of various public and private wastewater system projects throughout West Virginia and Ohio. Specific project experience includes gravity and low-pressure collection systems, pump stations, force main transmission systems, trenchless pipeline rehabilitation, bypass pump system design, odor and corrosion control, decentralized and alternative on-site disposal systems, and SCADA systems.

### Storm Water Systems

Overall experience includes water management planning and facility design in West Virginia and Ohio. Specific project examples include NPDES construction storm water permitting, SWPPP preparation, and design of detention basins. Stormwater collection and transmission systems to include detection basins.

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# David C. Hoy, P.E.

## Civil/Structural Engineer



**Years of Experience:** 8  
**Years with Chapman:** 8

### Education

B.S., Civil Engineering, 2006,  
West Virginia University

### Registration

Civil Engineer: WV, KY, VA

### Affiliations

Chi Epsilon, National Civil Engineering  
Honor Society  
ASCE, Member

## Qualifications

### Structural Engineering

Experience with investigation and analysis of existing structures. Experience with the design of various building structural systems including timber, concrete, steel, and masonry construction. Experience with foundation design, including metal building foundations and also deep foundations. Experience with structural design of water and wastewater structures both above and below ground. Performs shop drawing reviews and makes periodic site visits during the construction phase of projects.

### Projects Include

Jane Lew Elementary School Renovation  
(Lewis County, WV)

State Road Commission Building Renovations  
(Charleston, WV)

Canaan Valley Resort State Park New Ski Lodge  
(Davis, WV)

St. Albans Fire/Police Station Renovations  
(St. Albans, WV)



## Bruce A. Bradley PE, SE

Structural Engineer

Bruce's responsibilities include structural design for both building and bridge type structures. He prepares staged construction plans, estimates of probable costs; and project reports, as well as structural engineering planning, design, and construction documents. He also provides structural engineering for new buildings including manufactured buildings. His experience includes design and plan preparation of buildings and other structures including concrete water holding tanks, circular and rectangular clarifiers, water control and other miscellaneous structures on a variety of building and fish hatchery projects, including new construction and rehabilitations.

### EDUCATION

Bachelor of Science, Civil Engineering, University of Illinois at Urbana-Champaign (UIUC), 1995

### REGISTRATIONS

Professional Engineer:  
West Virginia, Wisconsin, Florida, South Dakota, Washington, Ohio, Vermont, Illinois, North Carolina, Oklahoma, Arkansas, Georgia, Connecticut, Minnesota, Maine

### INDUSTRY TENURE

22 years

### HDR TENURE

20 years

### RELEVANT EXPERIENCE

- **Florida Bass Conservation Center** *Florida*
- **Wild Rose State Fish Hatchery Renovation** *Wisconsin*
- **Auburn University E.W. Shell Fisheries Center** *Alabama*
- **Bodine State Fish Hatchery VHS Treatment** *Indiana*
- **Coursey Springs Fish Culture Station Renovations** *Virginia*
- **East Fork SFH Water Supply Improvements** *Indiana*
- **Front Royal Aquatic Resource Center Preliminary Engineering Report** *Virginia*
- **John D. Parker State Fish Hatchery** *Texas*
- **Pfelffer State Fish Hatchery Expansion and Renovation** *Kentucky*
- **Lincoln University Development of a New Aquaculture Facility** *Missouri*
- **Watha State Fish Hatchery** *North Carolina*
- **Ohio Fish Hatcheries Renovations (Castalia Kincaid London SFH)** *Ohio*
- **Richmond Hill Hatchery Building Renovation** *Georgia*
- **Shepherd of the Hills Fish Hatchery Facility Expansion** *Missouri*
- **West Virginia Fish Hatchery Renovations - Various Sites** *West Virginia*
- **Armstrong SFH Renovation** *North Carolina*
- **Art Oehmke State Fish Hatchery Water Supply Enhancement Project** *Wisconsin*
- **Wells Dam Hatchery Modernization** *Washington*

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# W. Thomas Cloer, III, NCARB, AIA

## Project Architect



**Years of Experience:** 16  
**Years with Chapman:** 11

### Education

B.S., Architecture, 2001  
University of Tennessee

### Registration

Architect: WV, VA

### Affiliations

National Council of Architectural  
Registration Boards  
American Institute of Architects  
Secretary, WV Chapter,  
St. Albans Property and Maintenance  
Board Member  
St. Albans Historic District  
Committee Member

### Projects Include

Man K-8 School Addition  
(Logan County, WV)

Teays Medical Office Building  
(Putnam County, WV)

Pleasant Hill Elementary School Renovations  
(Calhoun County, WV)

Jane Lew Elementary School Additions/Renova-  
tions  
(Lewis County, WV)

New Blackwater Falls State Park Cabins  
(Davis, WV)

Smithville Elementary School Additions/Renovations  
(Ritchie County, WV)

New Canaan Valley State Park Ski Lodge  
(Canaan Valley, WV)

Philippi-Barbour County Airport Industrial Building  
(Barbour County, WV)

## Qualifications

### Architectural Design

Experience ranges from programming, planning, budget analysis, design, construction documents, meeting coordination, bidding/negotiation services, and code compliance. Regularly providing leadership in architectural design and project management for new building design and renovation projects, such as K-12, parks and recreation, and government and municipal facilities.

### Project Types

- Public School Facilities
- Government Facilities
- Office Buildings
- Medical Office Facilities
- Single Family Housing
- Multi-Family Housing
- Recreational Facilities
- Aviation/Industrial Facilities
- ADA Assessments
- Site Planning

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# Phillip A. Warnock, NCARB, AIA

## Project Architect



**Years of Experience:** 24  
**Years with Chapman:** 13

### Education

B.S., Architecture, 1995,  
University of Tennessee

### Registration

Architect: WV, KY, IN

### Affiliations

National Council of Architectural  
Registration Boards  
American Institute of Architects

### Projects Include

Upshur County Courthouse  
Historic Projects (Buckhannon, WV)

State Road Commission Building  
Renovation and Additions  
(Charleston, WV)

WV DOH Rest Areas and  
Welcome Centers  
(21 Locations throughout WV)

WV DOH Division One  
Vehicle Repair Shop  
(Charleston, WV)

New Roark-Sullivan Lifeway Center  
Men's Shelter (Charleston, WV)

Mercer County Airport Terminal  
Building Renovation (Bluefield, WV)

Islamic Community Center  
(South Charleston, WV)

Pocahontas County  
Community Center (Marlinton, WV)

## Qualifications

### Architectural Design

Extensive experience with programming, planning, design, construction documents, budget analysis, coordination, bidding, negotiation, code compliance, and construction phase services. As a Project Architect, he provides design and project management leadership for projects including public, private, recreational, transportation, tourism, housing and historic facilities.

### Experience Includes

- New Facilities, Additions, and Renovations
- Governmental Facilities
- Historic Preservation/Restoration/Adaptive Reuse
- Community/Recreation Centers
- Rest Areas and Welcome Centers
- Health Care/Pharmaceutical Facilities
- Public School Facilities
- Aviation Facilities
- Military Support Facilities/Armories
- Research, Development, and Testing Labs
- HUD and Multi-Family Housing
- ADA Assessments
- Office Buildings
- Public Water and Wastewater Facilities
- Industrial Facilities

### Publications

Structure Magazine, February 2010

### Awards

Honor Award, WV AIA  
Upshur County Courthouse

Merit Award, WV AIA  
I-79 Burnsville Rest Area

Merit Award, WV AIA  
State Road Commission Building



## Patrick J. Daughton AIA

Architect

PJ's responsibilities include the development of construction documents architectural design and in all phases (i.e. schematic design, design development, preliminary design, construction documents, as-built drawings, and record drawings). He also provides on-site observation and field studies. PJ has experience with new and renovation projects and he is competent with building code compliance, cost estimating, researching and writing specifications, and project management. In addition, he has experience with handicap accessible design and design/build structures.

### EDUCATION

Bachelor of Science,  
Architecture, Southern  
Illinois University, 1994

### REGISTRATIONS

Architect: New York,  
Maryland,

### INDUSTRY TENURE

23 years

### HDR TENURE

13 years

### RELEVANT EXPERIENCE

- **Armstrong SFH Renovation** *North Carolina*
- **Shepherd of the Hills Fish Hatchery Facility Expansion** *Missouri*
- **Wild Rose State Fish Hatchery Renovation** *Wisconsin*
- **Art Oehmke State Fish Hatchery Water Supply Enhancement Project** *Wisconsin*
- **Enfield New Lake Water Treatment and Disinfection System** *Maine*
- **Thompson State Fish Hatchery and Little Manistee Weir** *Michigan*
- **Auburn University E.W. Shell Fisheries Center** *Alabama*
- **Coursey Springs Fish Culture Station Renovations** *Virginia,*
- **Deschutes Watershed Center Master Plan** *Washington*
- **East Fork SFH Water Supply Improvements** *Indiana*
- **Front Royal Hatchery Restoration** *Virginia*
- **John D. Parker State Fish Hatchery** *Texas*
- **Pfeiffer SFH Expansion and Renovation** *Kentucky*
- **Maine Fish Hatchery System Improvements** *Maine*
- **Richmond Hill Hatchery Building Renovation** *Georgia*
- **Roxbury Fish Culture Station Reconstruction and Improvements** *Vermont*
- **Thompson State Fish Hatchery Renovation to Increase Walleye Production** *Wisconsin*
- **William Jack Hernandez Sport Fish Hatchery** *Alaska*

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# Roger J. Kennedy, ASLA

## Landscape Architect

## Project Manager



**Years of Experience:** 27  
**Years with Chapman:** 26

### Education

B.S., Landscape Architecture,  
1990, West Virginia University

### Registration

Landscape Architect: WV, KY

### Affiliations

Trustee, WV Chapter,  
American Society of  
Landscape Architects  
Past President, St. Albans Rotary Club  
Member, Sigma Lambda Alpha Honor  
Society of Landscape Architects

### Awards

WV Division Of Highways  
Engineering Excellence:  
WV Route 10  
2013, 2011, 2000  
Corridor H  
2013

## Qualifications

### Site Development

Responsibilities include grading design, site planning and layout, analysis of existing features and services, storm water design and management, erosion control, as well as project management. Projects include prisons, landfills, military complexes, banks, airports, subdivisions, gas stations and other public facilities.

### Bridge and Highway

Responsibilities include the design of horizontal and vertical road alignments, superelevation design, intersection layout, slope design and quality control review. Projects include several multi-lane highways and bridges throughout West Virginia.

### Miscellaneous

Other experience includes the use of various civil design software packages for use in site development and road design, digital terrain modeling, hydraulic analysis and related computer aided design tools. Additional responsibilities include the development and management of the computing resources of the company. This includes the management of software and hardware inventories, as well as the development and management of all local area networks in each office and the wide area network which links them.

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# Doug Cage, PE

## GRW Mechanical Engineer



Years of Experience: 25

Years with GRW: 10

### Education

M.S., Mechanical Engineering, 1995, Missouri University of Science and Technology

B.S., Mechanical Engineering, 1988, Missouri University of Science and Technology

### Registration

Professional Engineer: WV, KY, MO, AL, OH, TX

### Professional Affiliations and Training

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)

American Society of Mechanical Engineers (ASME), Member

Building Officials & Code Administrators International (BOCA), Professional Member

### Qualifications and Similar Project Experience

Mr. Cage has 25 years of experience with building mechanical (HVAC, plumbing and fire protection) and process systems. His background as an Army Energy Office Chief lends a critical eye to the energy efficiency of systems for which he is responsible. Mr. Cage has been responsible for the mechanical, plumbing, and fire-protection systems design and construction of over 100 new and renovated facilities including military, civic, educational, healthcare, historic, housing, institutional and religious facilities.

**Marshall University Weisberg Family Engineering Laboratory, Huntington, WV - Lead Mechanical Engineer.** New, 16,000 SF engineering laboratory building. HVAC systems feature rooftop VAV systems with variable electric reheat.

**Cumberland Valley Technical College Building One Renovation, Harlan, KY - Mechanical Engineer.** Renovation design for 31,000 SF building.

**Pulaski County Schools Area Technology Center Gas Appliance Training Laboratory, Somerset, KY - Project Manager.** Renovation of Area Technology Center to accommodate a new gas appliance training program

**Pulaski County Burnside Elementary School, Somerset, KY - Project Manager.** Replacement of coal-fired boilers with propane-fired high efficiency boilers.

**Pulaski County IT Data Center, Somerset, KY - Engineering Manager.** Renovation of retail building into school district's new IT hub. HVAC systems feature raised floor computer room systems (precision cooling and humidity control) and general office space conditioning with packaged rooftop units; and natural gas operated generator for emergency power backup.

**Pulaski County High School Cooling Towers, Somerset, KY - Project Manager.**

**Pulaski County Memorial Elementary School, Somerset, KY - Project Manager.** Replacement of collapsed plumbing within the school's kitchen.

**Pulaski County Nancy Elementary School, Somerset, KY - Engineering Manager.** Administrative area addition and classroom renovation project which included HVAC systems feature geothermal heat pump systems and demand-controlled ventilation.



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**Pulaski County Northern Middle School, Somerset, KY - Engineering Manager.** Addition of six classrooms. HVAC systems featured console and above-ceiling geothermal heat pump systems, demand-controlled ventilation, and upgrade of building controls to district's facility management system.

**Pulaski County Woodstock Elementary School, Somerset, KY - Project Manager.** New 450-student elementary school with geothermal heat pump systems located on a mezzanine above corridors.

**Pulaski County High School and Southern Middle School Additions, Somerset, KY - Mechanical Engineer.** Design of HVAC, plumbing, fire protection, power, communications and lighting systems. Cutting-edge HVAC system marries the energy efficiency of geothermal and ease-of-maintenance and reliability of traditional VAV air handling system, utilizing hot and chilled water.

**Pulaski County Northern Elementary School, Somerset, KY - Engineering Manager.** New 69,250 SF, 450-student elementary school with geothermal heat pumps generating hot and chilled water serving VAV air-handling systems with hot water reheat.

**Pulaski County Southwest High School Addition and Renovation, Somerset, KY - Engineering Manager.** New 28,000 SF, two-story classroom addition and 1,980 SF renovation to the existing cafeteria.

**Oak Hill Elementary Addition, Pulaski County Schools, Somerset, KY – Lead Mechanical Engineer.** Four-classroom addition with console and above-ceiling geothermal heat pump systems, demand-controlled ventilation, and an upgrade of building controls to the district's facility management system.

**Madison Southern High School Auditorium Addition, Berea, KY – Lead Mechanical Engineer.** Addition of 400-seat auditorium building. Required relocation of numerous existing utilities. HVAC systems feature packaged rooftop air-handling systems and duct distribution that was both very quiet and stealthy, fitting into the architectural intent of the facility.

**Madison Kitchen Renovations (3), Madison County Schools, Richmond, KY – Lead Mechanical Engineer.** Replacement and addition of three elementary school kitchens in the Madison County school system (Daniel Boone, Kit Carson, & White Hall schools). HVAC systems feature variable refrigerant volume split systems in the kitchens and packaged rooftop units were added to the dining areas that were previously not air-conditioned.

**Henry Clay High School Renovation, Lexington, KY – Lead Mechanical Engineer.** Replacement of mechanical systems throughout building. HVAC systems featured 26 multi-zone rooftop air-handling systems with packaged cooling and hot water reheat, new boilers and associated components within the central plant, kitchen ventilation systems, sprinkler systems, acid waste piping, fume hoods, etc.

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# Monty Maynard, PE, LEED AP BD+C

GRW Electrical Engineer



Years of Experience: 37

Years with GRW: 18

## Education

B.S., Electrical Engineering, 1978, University of Kentucky

## Registration

Professional Engineer (Electrical): KY, WV, IN, GA, TN, TX, NV, NC, MS, MI, AL, CA

NCEES Member allows reciprocity with other states

LEED Accredited Professional, Building Design + Construction

## Professional Affiliations and Training

National Fire Protection Association

International Society of Automation

American Institute of Architects

American Council of Engineering Companies

National Council of Examiners for Engineering and Surveying

Design Build Institute of America

Ohio Valley Region, Design Build Institute of America

## Qualifications and Similar Project Experience

Mr. Maynard has nearly four decades of experience with electrical and mechanical design, process instrumentation and control, and project management. Mr. Maynard has designed electrical and mechanical systems for more than 300 projects with total construction values as high as \$188 million. His areas of technical expertise include electrical power distribution, substation design, alarm systems, communications, lighting, lightning protection, instrumentation/controls/telemetry, power quality, energy efficiency and code compliance.

**Cumberland Valley Technical College Building One Renovation, Harlan, KY** - Electrical Engineer. Renovation design for 31,000 SF building including updated exterior appearance, and modernized teaching spaces. Work included total replacement of building mechanical and electrical systems.

**Fort Knox Macdonald Elementary School Renovation, Ft. Knox, KY** - Principal-in-Charge. Renovation of a 63,000 SF Army school with year-round schedule. Involved a new standing seam roof installed over 48,000 SF to create an attic for 100% replacement of existing HVAC system equipment with geothermal-based heat pump system, new electrical service system, and fire alarm system upgrade.

**Lexington Catholic High School Phase II Addition, Lexington, KY** - Engineering Manager. 48,000 SF addition included 1800-seat two level gymnasium and running track, performing arts stage, art wing, and new administration area.

**Marshall University Weisberg Family Engineering Laboratory, Huntington, WV** - Electrical Engineer. New, 16,000 SF engineering laboratory building. Building security systems included access control and CCTV. HVAC systems feature rooftop VAV systems with variable electric reheat.



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## REFERENCES



Honorable Joe Drenning, Mayor  
Town of Davis  
Post Office Box 207  
Davis, WV 26260  
(304) 472-1651

Honorable John Manchester, Mayor  
City of Lewisburg  
942 Washington Street West  
Lewisburg, WV 24901  
(304) 645-3776

Mr. Nyle Fisher, P.E.  
West Virginia Division of Highways  
Building 5, Room A-350  
1900 Kanawha Blvd., E.  
Charleston, WV 25305  
(304) 558-9289

Mr. Zack Brown Assistant Chief  
Zack Brown, Assistant Chief-Operations  
Wildlife Resources Section, WVDNR  
324 Fourth Ave  
South Charleston, WV 25303  
Phone (304) 558-2771



# HDR References

We want to meet your needs in the most responsible and cost-effective manner possible. Our success in meeting this goal is illustrated by our high percentage of repeat business and our reputation for completed projects that meet and exceed our clients' expectations.

Our experience with fisheries engineering and design traces back to 1978 when the first of many successful fisheries projects was completed. Since then, projects involving hatcheries, whether in planning, design, construction, or operations evaluation, have been a mainstay of our services. Our track record of satisfied clients has allowed our service range to extend to 47 states, three Canadian Provinces, and beyond North America, totaling over 750 projects.

Our project team's past successful completion of many similar comprehensive fish hatchery engineering studies and design projects will be verified by the select references listed below.

**Client:** Florida Fish & Wildlife Commission  
**Contact:** Mr. Rick Stout, Hatchery Manager  
352.732.1225  
**Project:** Richloam State Fish Hatchery / Florida Bass Conservation Center  
Sumter County, Florida

**Client:** Wisconsin Department of Natural Resources  
**Contact:** Mr. Steve Fajfer, Hatchery Manager  
920.622.3527  
**Project:** Wild Rose State Fish Hatchery  
Wild Rose, Wisconsin

**Client:** Maine Department of Inland Fisheries and Wildlife  
**Contact:** Mr. Todd Langevin, Superintendent of Hatcheries  
207.287.5262  
**Project:** Casco State Fish Hatchery – Water Supply Renovation  
Casco, Maine