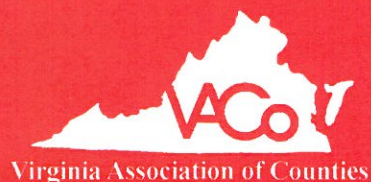


Recognizing the Best in County Government Programs!



2013 Achievement Awards

ATTN: 2013 Achievement Awards Program
Virginia Association of Counties
1207 East Main Street, Suite 300
Richmond, Va. 23219-3627

Call for Entries



2013 VACo Achievement Awards

Deadline: June 1, 2013

Application Form

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2013.**

Program Information

Locality Roanoke County
Program Title Walrond Park Trail Project
Program Category Parks and Recreation

Contact Information

Name Doug Blount
Title Director
Department Roanoke County Parks, Recreation & Tourism
Complete Mailing Address 1205 Kessler Mill Rd. Salem VA 24153
Telephone # (540) 777-6321 Fax # (540) 387-6146
E-mail dblount@roanokecountyva.gov

Signature of county administrator or chief administrative officer

Name B. Clayton Goodman III
Title County Administrator
Signature* B. Clayton Goodman III

*Entries without this signature will not be accepted.

Program Overview

One page summary of entry submission

REFERENCE PAGE - PROJECT SUMMARY
Walrond Park Trail Project
2013 VaCo Achievement Award Submission

In 2007 Roanoke County Parks, Recreation and Tourism received a \$57,000 grant from the Virginia Department of Conservation and Recreation (DCR) to complete 2/3 mile loop trail around a pond and wetland area within Walrond Park. The project was almost scrapped in 2010 as we were not able to begin the work due to budget and staffing cuts. Finally, after a grant deadline extension and some innovative department planning, our crews set to work completing the trail and wetland boardwalk system 100% in-house between September 2011 and February 2012.

This project's unique design and execution can serve as a model for other Parks and Recreation departments to follow. First, Roanoke County was among the first municipalities in Virginia to utilize the cost effective and environmentally friendly "Diamond Pier Pin" foundation system for raised boardwalk sections of the trail. This allowed staff to complete the work without use of external contractors and design firms. Second, the department partnered with the Roanoke County Sheriff's Office to get inmate crew assistance in trail construction. Not only did the inmate crew provide several hundred hours of low cost labor for the project, but the partnership expanded to include other areas of interdepartmental cooperation after the conclusion of this work. Finally, the project was carried out in a way that minimized environmental impact.

The end result was combination crushed stone upland trail and wetland boardwalk that has already become one of the County's most popular walking spots.

Entry Submission

Walrond Park Trail Project

Roanoke County Parks, Recreation & Tourism

Walrond Park Trail Project - 2013 VaCo Achievement Award Submission

THE CHALLENGE

In 2007, Roanoke County's Parks, Recreation and Tourism department underwent a master plan study to determine what the future of our parks system should look like. The top community need repeatedly cited in the study was for increased walking spaces and trails. (*APPENDIX A*). Partially in response to this study, the department applied for and received a \$57,000 grant from the Virginia Department of Conservation and Recreation (DCR) to complete 2/3 mile loop trail around a pond in Walrond Park (*APPENDIX B*).

Walrond Park is one of the largest and most frequently visited parks in the northern portion of the County, seeing heavy traffic from athletics games and general recreational use. Despite abundant beauty and a picturesque natural pond, there were no existing walking trails in the park. Visitors made their own path through a natural wetland area behind the pond, as was evident from the visible foot traffic there.

As the recession took full effect in our region in 2010, the project was nearly scrapped as we were not able to begin the work due to budget and staffing cuts. Finally, after a grant deadline extension and some innovative department planning, our crews set to work completing the trail 100% in-house between September 2011 and February 2012. The final result was combination crushed stone upland trail and wetland boardwalk that has already become one of the County's most popular walking spots.



INNOVATIVE NATURE OF DESIGN / FUNDING

As part of the DCR grant, the \$57,000 was to pay for construction costs, and Roanoke County was to pay for the additional 20% of the project costs associated with labor. To keep the project within budget, project planners came up with two innovative cost saving techniques:

- **Diamond Peir Pin Foundations** – Anchoring a boardwalk trail in a wetland is no easy task. Most footing solutions require heavy machinery and specially trained installers. Our staff discovered a new product called a “Diamond Peir Pin,” now gaining popularity especially on the west coast. Roanoke County was one of the first in the Commonwealth to adopt this product for boardwalk trail foundations. The benefits of

the specially designed footers are low cost, and more importantly simple installation. Staff could install them using only a gas powered hammer and shovel (*APPENDIX C*).



- **Utilization of Inmate Crew Labor** - When several park maintenance positions eliminated from the budget due to the recession, our department turned to the Sheriff's Office for financial savings. Beginning in 2011, we began to pay for the use of a jail crew for mowing and general park upkeep (*APPENDIX D*). This arrangement replaced two seasonal part-time employees and eliminated several contracting services from our budget, while incurring the cost of most of a deputy's salary - a financially even exchange. However, when the mowing season ends in September, our department can utilize the inmate crew for larger construction projects like this one at virtually no cost. The Walrond Park Trail Project was our department's FIRST use of a inmate crew for a major infrastructure project. Crews provided support in grading the surface of the trail, and put in several hundred man-hours worth of labor. Since this project, we have been fortunate enough to use inmate crews for other large projects, saving the department a substantial amount of money and resources. According to Lt. Eric Alexander, who

oversees the prisoners, “Working on these projects keeps the inmates busy, and their jail time goes by faster because they are staying active and useful. Their work helps them rehabilitate and teaches them new skills such as carpentry, construction, painting and landscaping.”

OVERALL EFFICIENCY OF RESOURCES

Use of the Diamond Peir Pins and inmate crew saved a significant amount of staff time, and the project would not have been possible without these cost saving techniques. However, after 3,474 hours of staff time, the final labor costs for the project still exceeded grant specifications by \$11,180, coming in at \$55,788 (*APPENDIX E*). In a bold move, our project team sent a request to DCR to get reimbursed for the project overage through staff hours (*APPENDIX F*). In February 2012, Roanoke County was pleased to be awarded an increase in the grant award by the amount of the overage, saving taxpayers a considerable amount of money.

AESTHETICS AND ENVIRONMENTAL FACTORS

The completed trail provides a place for our residents to walk, enjoy the beauty of nature, and explore the diverse wetland ecosystem in a way that could never be done before at Walrond Park. Special care was taken to meet ADA standards of grades less than 8.3% throughout the trail design. Aesthetically, the trail fits into place in the natural environment by following a path visitors already took around the pond. Considerations were also made for future maintenance of the trail, including crushed stone material for ease of replacement and

special ACQ treated lumber withstand the wet conditions of the landscape.



Low environmental impact was one of the top concerns for this project, as it involved labor in and public access to a wetland. Our Diamond Peir foundation caused less damage to the environment than standard boardwalk platform installation, and cut a more narrow path through the natural landscape. Project planners took care in acquiring permitting from the US Army Corps of Engineers. A secondary permit was acquired to construct a lower gravel trail as part of the trail system, with an exception to build up a path in a limited area of the wetland. Building a lower gravel trail in this area saved the department \$25,000 in construction costs that would otherwise have had to be a raised boardwalk to meet USACE requirements.

A MODEL FOR OTHER AGENCIES

The trail within Walrond Park has been a fantastic addition to Roanoke County's parks system, providing a beautiful walking place, as well as an educational tool for students learning about the wetland ecosystem. This project is already serving as a model for other departments and agencies in the following ways:

- **Interdepartmental Cooperation** – While inmate crew work is not unique in Virginia, the relationships forged through the Walrond Park Trail Project are already leading to new uses for inmate labor. We have expanded the scope of their work from simple mowing and roadside trash collection, to larger infrastructure efforts. As a direct result of this project, the Sheriff's Office is currently in discussions with other Roanoke County departments about establishing a similar reciprocal agreement.

- **Taking Projects In-House** – With this project Roanoke County has demonstrated a way to work through budget constraints by finding an in-house solution, rather than abandoning a project for lack of funding.

- **Adopting New Techniques** – The time staff spent researching alternative methods of boardwalk trail construction clearly paid huge dividends for our department. With the adoption of Diamond Peir Pin foundations for this project, we have set a precedent for affordable and environmentally sensitive trail construction in our region.

- **Thorough Project Documentation** – This was a model project from start to finish, capped off by applying for and receiving over \$11,000 in additional funding from DCR for project overages. Our project managers were able to supply detailed information on every hour worked by every individual on the job, as well as a complete inventory of receipts.

Representatives from DCR had no questions about justification for the funding request.

Through innovative use of materials and labor, our staff was able to respond to a community need with a low-cost recreational space while preserving the beauty of this natural area for future generations.

Appendix A

Selected pages from the Roanoke County Parks,
Recreation and Tourism Master Plan from 2007

Figure 6 indicates the households that have a need for parks and recreation facilities. Based on the survey, the highest percentage of respondents fifty nine (59%) expressed a need for Greenways for walking and biking. This is representative of the nationwide trend for a huge demand in greenways and trails for walking and biking. Overall, this indicates the high level of interest that the community has in a variety of recreation activities and facilities.

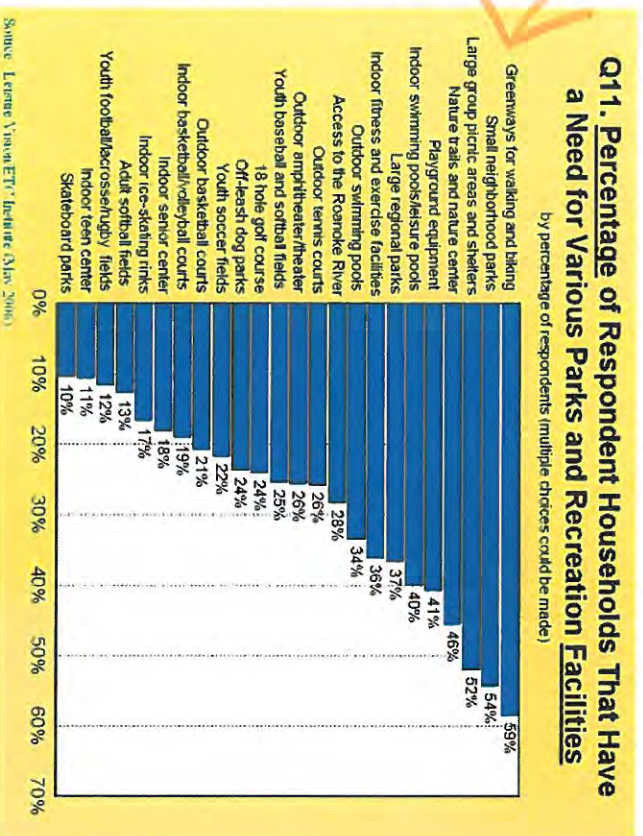


Figure 6 - Percentage of Households with a Need For Parks and Recreation Facilities

Figure 7 indicates the extent to which the existing parks and recreation facilities meet the needs of respondent households. For all 24 facilities, less than 50% of respondents indicated that the facility completely meets the needs of their household. This demonstrates the high level of unfulfilled need for parks and recreation facilities that exists in the market.

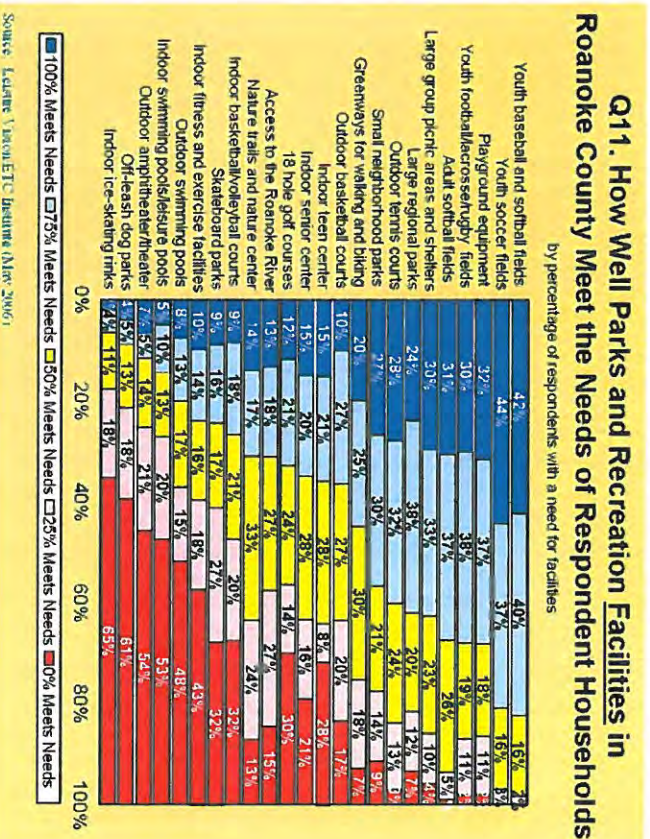


Figure 7 - How Well Parks and Recreation Facilities Meet the Needs of Respondent Households

Figure 8 indicates the parks and recreational facilities that are most important to respondent households. Greenways for walking and biking, thirty six percent (36%) had the highest percentage of respondents select it as one of the four most important facilities. These facilities directly reflect what respondent households mentioned as facilities that they have a need for. This, unfulfilled need and facility importance, is the same premise used by PROS in determining the facility priority in the Needs Assessment analysis.

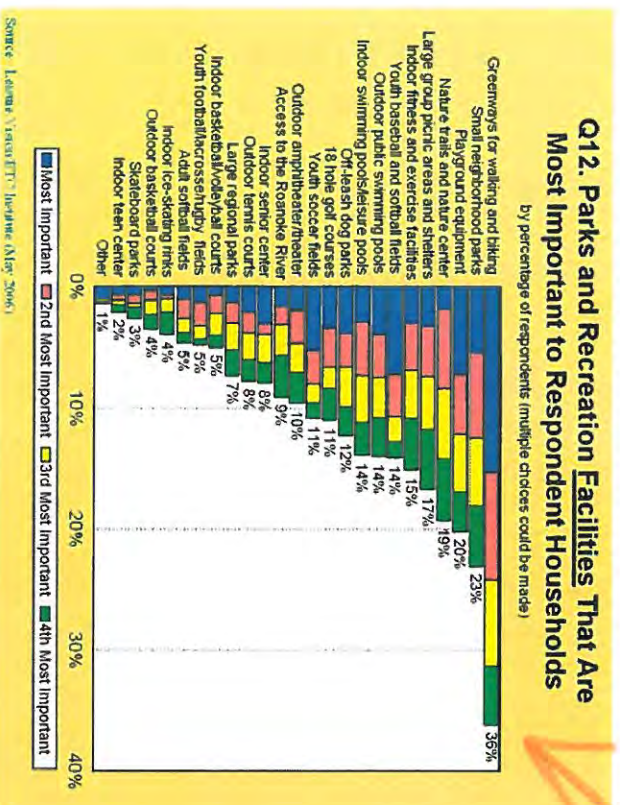


Figure 8 - Most Important Parks and Recreation Facilities

Figure 9 shows the percentage of respondent households that have a need for various recreation programs. Three (3) of the twenty one (21) recreation programs had at least thirty percent 30% of respondent households indicate they have a need for them. These three programs include: adult fitness and wellness programs forty two percent (42%), youth sports programs thirty two percent (32%), and County-wide special events thirty percent (30%).

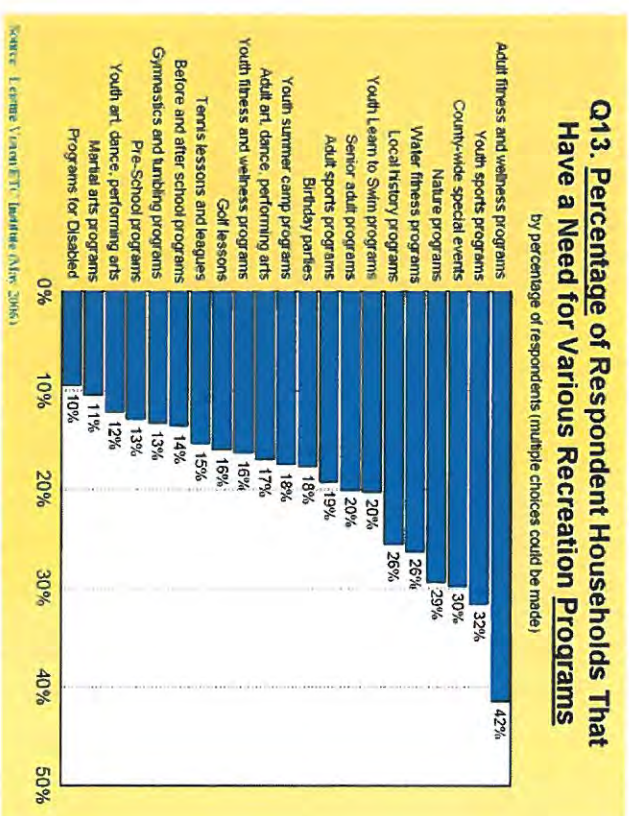


Figure 9 - Need for Recreation Programs

Figure 14 depicts the level of satisfaction the respondent households felt with various parks and recreation facilities. Forty-nine percent (49%) of respondents indicated being either very satisfied eighteen percent (18%) or somewhat satisfied thirty one percent (31%) with the overall value their household receives from parks and Roanoke County parks and recreation facilities. Community input participants indicated at community meetings that they did not have a good understanding of the value of Roanoke County parks and recreation facilities.

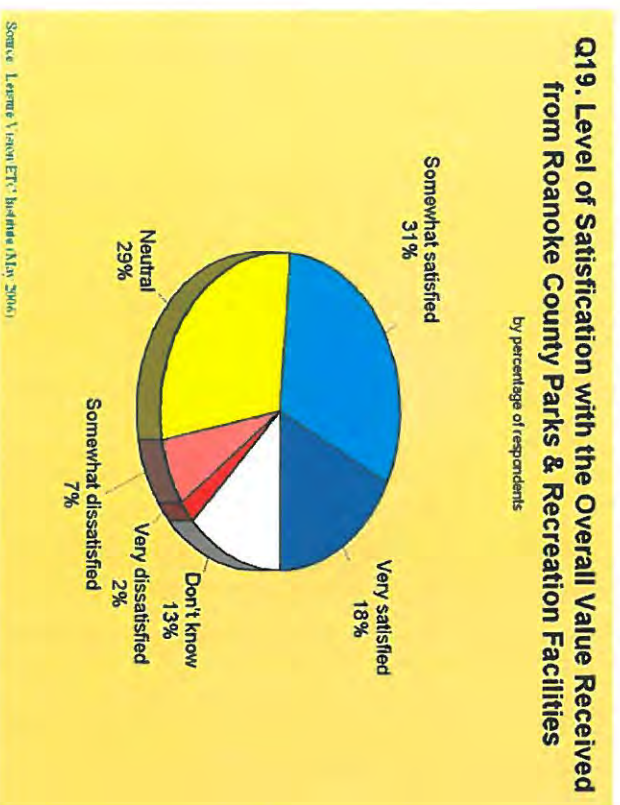


Figure 14 – Level of Satisfaction with Overall Value Received from Roanoke County Parks and Facilities

Figure 15 depicts the level of support for various actions to improve and expand parks and recreation. Of the 10 actions to improve and/or expand the parks and recreation facilities in Roanoke County, there are three actions that at least 50% of respondents are very supportive of. These three include: renovate/develop greenways for walking and biking fifty seven percent (57%), develop new indoor recreation facilities fifty three percent (53%), and purchase land to develop for passive use fifty percent (50%). It should also be noted that eight (8) of the ten (10) actions had over fifty percent (50%) of respondents indicating they were being either very supportive or somewhat supportive of them.

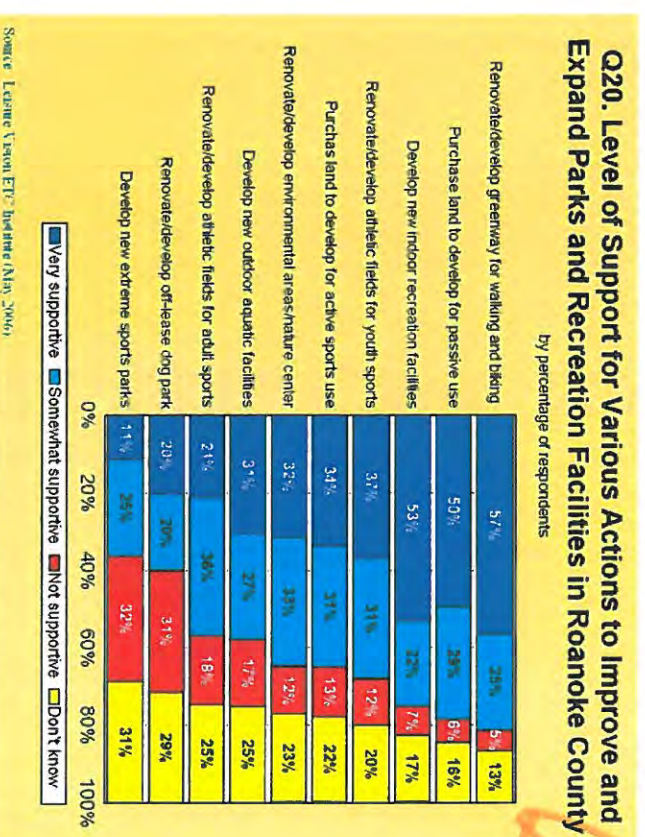


Figure 15 – Level of Support for Various Actions to Improve and Expand Parks and Recreation Facilities

Appendix B

Grant approval notification from the Virginia Department
of Conservation and Recreation

L. Preston Bryant, Jr.
Secretary of Natural
Resources



Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street, Suite 302
Richmond, Virginia 23219-2010
Phone: (804) 786-6124 Fax: (804) 786-6141

June 8, 2007

Mr. Lon Williams, ASLA
Landscape Architect/Park Planner
Roanoke County
Department of Parks, Recreation and Tourism
1206 Kessler Mill Road
Salem, Virginia 24153

Dear Mr. Williams:

It is my pleasure to inform you that the Department of Conservation and Recreation (DCR) has tentatively approved a Virginia Recreational Trail Grant of \$57,000 in support of the Walrond Pond Park Trail trail project.

In accordance with the Virginia Recreational Trails Program, applicants who receive tentative grant approval will be required to submit to DCR, within 60 days, written environmental review comments from the following state agencies:

- Virginia Department of Environmental Quality
- Virginia Department of Historic Resources
- Virginia Department of Game & Inland Fisheries
- Division of Natural Heritage, Department of Conservation and Recreation

Contact information for requesting the necessary environmental reviews is provided on the enclosure. Costs of reviews are reimbursable if the project receives final approval and is completed in accordance with the grant application.

Please send written environmental review comments to:

Ms. Synthia Waymack, Grants Administrator
Department of Conservation and Recreation
Division of Planning and Recreation Resources
203 Governor Street, Suite 326
Richmond, Virginia 23219

*State Parks • Soil and Water Conservation • Natural Heritage • Outdoor Recreation Planning
Chesapeake Bay Local Assistance • Dam Safety and Floodplain Management • Land Conservation*

**NATIONAL RECREATIONAL TRAIL FUND (RTP)
FEDERAL HIGHWAY ADMINISTRATION - FHWA
VIRGINIA RECREATIONAL TRAILS FUND PROGRAM
DEPARTMENT OF CONSERVATION AND RECREATION - DCR**

Project Agreement

Sponsoring Agency: Roanoke County

State Project Number: NRT-07-FY (001) - VRT-217

Project Title: Walrond Park Trails

Project Period: Date of Formal Approval to 12-31-2010

Project Scope: Construction of approximately 530 linear feet of trail corridor for wetland interpretation, 2 wildlife viewing platforms and 3,200 linear feet of stone dust trail that will meander from the wetland trail to the parking lot.

Total Project Cost: \$ 71,250 (minimum)

Project Grant Amount: \$ 57,000 (maximum)

The following are hereby incorporated into this agreement:

1. Federal Highway Administration (FHWA), Interim Guidance for the National Recreational Trails Funding Program dated April 1, 1999 as amended.
2. Public cost principles in Office of Management and Budget (OMB) Circulars A-110, A-122 and A-133 (<http://www.whitehouse.gov/omb/circulars/>).
3. Virginia Recreational Trail Fund Manual (VRTFM).
4. Fiscal Procedures of the Virginia Recreational Trail Program outlined in VRTFM.
5. Specific Project Application and amendments submitted for funding assistance under the Virginia Recreational Trail Fund Program.
6. Compliance by sponsoring agency of all applicable state, federal and local environmental laws, regulations and ordinances including compliance with the Virginia Erosion & Sediment Control and Virginia Stormwater Management Laws & Regulations.
7. Submission of Quarterly Progress Reports on status of grant implementation. First report due no later than December 31st 2007.

The Department of Conservation and Recreation (DCR) and the Sponsoring Agency named herein mutually agree to perform this agreement in accordance with The Safe, Accountable Flexible, Efficient Transportation Equity Act: A Legacy For Users, the provisions and conditions of the FHWA Interim Guidance dated April 1, 1999, as amended and with the terms, promises, conditions, plans, specifications, estimates, procedures, project proposals, maps and assurances attached hereto or obtained by the state and hereby made a part hereto.

The following special project terms and conditions were added to this agreement before it was signed by the parties hereto:

All grant funds shall be paid on an 80% matching reimbursement basis not to exceed the total grant amount of \$ 57,000.

The Recipient agrees to adhere to the specific recommendations regarding environmental concerns received during the review of this project by the Commonwealth's Natural Resource Agencies.

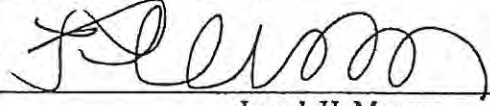
The Recipient agrees to contact the appropriate state agency (s) if any unexpected environmental concerns are encountered during project construction.

The Recipient agrees to keep DCR apprised of environmental issues associated with the project throughout the life of the grant.

Request for reimbursement of grant funds must be submitted no less than once per year on completed work covered by the project agreement that has been paid by the local sponsor. It must be supported by documentation (copies of invoices, cancelled checks [front and back], etc.) of payment.

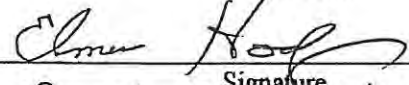
In witness whereof, the parties hereto have executed this agreement as of the date entered below.

The Department of Conservation and Recreation
Commonwealth of Virginia

By  for Date 11/15/07
Joseph H. Maroon
Department Director

Sponsor/Grant Recipient

Name Elmer Hodge
Please Print

By  Date 11/28/07
Signature
Title County Administrator

Project Manager Contact Information

Name: Lon Williams

Address: 1206 Kessler Mill Road

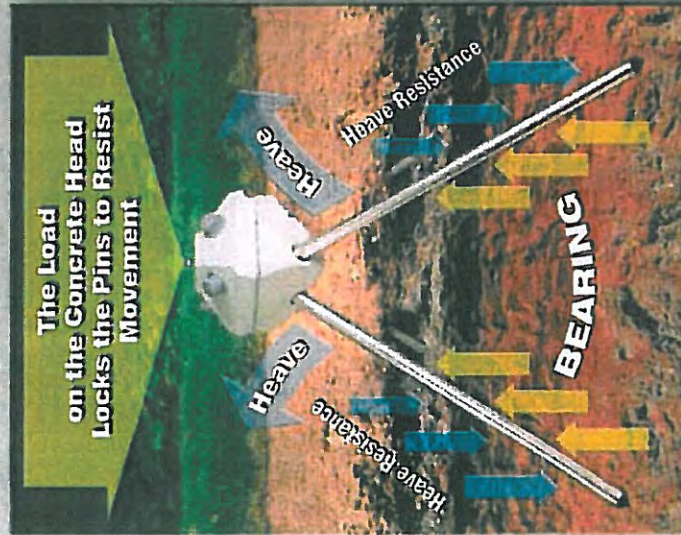
Telephone: 540-387-6078
X503 Email address lwilliams@roanokecountyva.gov

Appendix C

Information about Diamond Peir Pin Construction

DiamondPier.
HIGH TECHNOLOGY
FOUNDATIONS

**Engineered
for Consistent
Reliability and
Performance**



Backed by a
**LIFETIME
WARRANTY**
Covering Parts and Labor

DiamondPier.
**Lifetime
Warranty**

Covering Parts and Labor

The Pin Foundations, Inc. Diamond Pier DP50 High Technology Foundation is warranted for the life of the original supported structure to perform to the published capacities.

The above warranty shall apply only if the product is handled and installed in accordance with Pin Foundation's recommendations and specifications.



by
Pin Foundations, Inc.
www.DiamondPiers.com

Distributed by:



Install
in Minutes
...Frame
Immediately

DP50
Code Compliant
ESR-1895

Proven Performance

Over 15 Years of Installations ...No Call Backs!

Testimonials

North Wind reconstructed a boardwalk destroyed by Hurricane Ivan, at Hurlburt Field Air Force Base. Two months later, the tidal surge from Hurricane Dennis submerged the boardwalk, and it was repeatedly rammed by a 26' sailboat in 100 mph winds. Then Katrina struck... The boardwalk maintained its level and sturdiness, and not a single Diamond Pier was compromised. ...the Diamond Piers acted as a major stabilizing factor.

Taj Goodpastor - Project Manager, North Wind, Inc.

D&C Construction built a 1500 ft by 12 ft wetland boardwalk for the Metropolitan District Commission of Massachusetts - winter of 2004. The following spring, 100 year floods rose over the boardwalk. Inspecting the work after another severe winter a year later, the Diamond Piers remain precisely in place with no movement. This product truly lives up to expectations, and is without a doubt the foundation of the future.

James Morris - Director of Operations, D&C Construction

Timberform constructed 3 boardwalks in National Parks in Hokkaido. Top rails of handrails and all planking have kept perfectly level. There is no damage from frost heave. Diamond Piers have not moved and the whole structure is perfectly sound.

Eiji Maeno - Timberform Japan Co. Ltd

Diamond Piers have been used on projects throughout Chicago since 1996. To date there have been no

owner or building official complaints regarding

settlement or movement due to frost heave. The system provides an equivalent, durable and safe alternative to typical concrete piers.

*Steven Michels
Structural Engineer
State of Illinois*



DiamondPier

HIGH TECHNOLOGY FOUNDATIONS

DiamondPier

Fast and Efficient Installations

• **Fast Installation** You can Frame Immediately

• **Save an Inspection** Call it in Later

• **Proven Technology**

Field Tested Over 15 Years Worldwide

• **Low Environmental Impact**

• **Easy to Install**

• **Repositionable**
Remove Pins with
Pipe Wrench

• **Lifetime Warranty**
Parts and Labor



US Patents: 5,039,256; 6,910,832; 7,326,003

DiamondPier DP50

High Technology Foundations



- High Strength Reinforced Concrete Head meets or exceeds ACI 318 standards
- Galvanized Pins meet or exceed ASTM standards
- High Impact Inspection Plugs
- Pin Caps install after inspection
- Pre-Cast 1/2" Galvanized Anchor Bolt to secure standard post brackets

For all applications refer to the manufacturer's complete installation guidelines



Pin Driving Bit

for use with most impact hammers that accept an 1-1/8" hex shaft

Commercial Grade Piers also available:

DP75 and DP100

About the Company Founder

Rick Gagliano developed the first pinned foundation system in 1984 for an installation in a tidal marsh. After completing his architectural thesis study on rigid pile clusters, Rick founded Pin Foundations, Inc. in 1992. With 7 patents supporting the technology, the Diamond Pier is a uniquely durable, versatile and environmentally friendly approach to construction.



Load Bearing Capacity Comparison

Soil Types*	Pier Types	
	18" Round 1.77 sf	16" Square 1.78 sf
2000 psf Sands	3540 lbs.	3560 lbs.
1500 psf Silts/Clays	2655 lbs.	2670 lbs.
	3600 lbs.	3600 lbs.
		2700 lbs.

*IRC 2006/2009, Table R401.4.1

Code
COMPLIANT

The Diamond Pier DP50 is recognized by the International Code Council (ICC) for residential applications. The report (ESR-1895) and test results are available on our website at..

www.DiamondPiers.com/ESR



DIAMOND PIER®

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- [Capacity Example](#)
- [Pier Capacity Overview](#)
- [Specifications](#)
- [Heave & Expansion](#)
- [DP100 Installation](#)
- [DP100 Detail](#)
- [DP100 Head Section](#)
- [DP100-4B Bolt Pattern](#)

More Info

- [Brackets & Bits](#)
- [Public Agencies that have specified the Diamond Pier](#)

Public Works

The Diamond Pier® DP-100 model is an engineered, low impact foundation for use in public projects such as boardwalks, pavilions, overlooks, and bridges. It is most commonly used in wetland, tidal, sensitive or difficult access sites, and provides significant compression, uplift and lateral load capacity in these typically marginal, saturated soils.

The 100 pound pre-cast concrete head uses four 42", 50", 63" or 84" Pins per pier, and has a 5/8" anchor bolt embedded in the top for attaching post or beam brackets. The pier also comes in a 4-bolt top model allowing for steel plate connections and column leveling. A new DP-75 model pier is also coming soon.

The Pin length is based on the pedestrian or vehicle loading of the structure, frost or expansive soil requirements and the strength of the supporting soils. If necessary, an engineer's stamp of the pier capacities can be provided for a number of states in the US, when based on soils information from a local licensed geotech. The foundation system is designed to work in uniform or layered sands, silts and clays, but is not intended for deep peats, unconsolidated fill or rocky sites. Installation is simple, and can be accomplished by general contractors, public works crews or volunteer groups, without special training or vendor supervision.

Contact Pin Foundations direct for all engineering, project support, DP-100 sales, and information on the new DP-75.

Pin Foundations, Inc.
 8607 58th Ave NW
 Gig Harbor, WA
 98332

Toll Free: (866) 255-9478 Phone: (253) 858-8809
 General Email: info@diamondpiers.com
 Diamond Pier® US Patents: #5039256,
 #6578333 & 7326003





8607 58th Avenue Northwest,
Gig Harbor, Washington 98332

Phone 253 858-8809, Fax 253 858-8607
Website www.pinfoundations.com

DESIGN and ENGINEERING

Pin Foundations are pre-engineered systems. For some applications, in poorer soils or where heavy loads are being considered, a pier capacity must be determined from soils information specific to each site. The steps below will help you to define your project so that a Pin Foundation representative can assist you with your order.

Step 1—Determine your soil and site characteristics.

For Pin Foundations to determine load capacity, you must provide a general description of the soil, along with its angle of internal friction (phi angle), cohesive strength (if applicable) and dry unit weight.

This information can be obtained from sampling within the typical pin depth - 3 to 7 ft for DP-100, 2 to 5 ft for DP-50 - and need not involve a testing lab or expensive coring equipment. Most local geotechs can make these determinations with a single field visit, or be able to determine the information from regional soil surveys or previous-soils studies done on site. Generally two to three samplings will suffice within a given project area.

Describe your site in terms of vegetation, topography, seasonal or consistent water or saturation levels, frost depth and water flow if applicable.

Step 1—Determine your structure's loads, preferred materials, height and width.

Boardwalk, Deck or Shed Construction

The capacity developed in step 1 will lead directly to recommended superstructure spans depending on the structure's width, height above grade and any additional loads. The use of railings, roofs, bridges and ramps will all affect the loading characteristics of the project and must be defined for Pin Foundations Inc.

Define your local snow loads (if applicable), pedestrian (psf) or vehicle loads, and superstructure dead loads along with spans, widths and proposed joist, post or beam sizes.

When considering your options, try to pick materials that are locally available, and will be acceptable to local building officials and environmental groups for use on your site. For boardwalk structures, consider the movement of wildlife on site when determining the height of the structure, and the related visual impact of railing systems and ADA access requirements. Consider also the bulk of the members you intend to use both for visual and site access issues, and the complexity of the structure as it relates to available contractor or volunteer labor skills.

The layout of the structure across-should avoid large trees and their associated roots, which can make pin driving more time consuming. It should also skirt waterways or exposed rock. Although many pin installations have been done in difficult soil conditions, these types of installation are more difficult and expensive.

Step 3—Call your Pin Foundation Representative.

With the information above in hand, your representative can select the best system for your project, help detail or specify it for permit drawings if necessary, and provide you with material and shipping costs.

Provide your "Ship To:" zip code, the type of labor you intend to use - ie volunteer, general contractor or "in-house" crew, and indicate whether they can provide a forklift or not for offloading shipments.

There are generic details, manufacturer's installation instructions, and specifications on our web page that can be used, and/or revised as necessary for your specific project. Please call 1-253- 858-8809 or visit www.pinfoundations.com.



PIN FOUNDATIONS INC.



Calculation Software for Pin Foundation System

PROJECT INFORMATION:

Project Name: Strangel Cabin
Product: DP-100, Large Diamond Pier
Location: Winnipeg, CN
Engineer: local soil survey
Date: 9/22/2006

SOIL INFORMATION:

Soil 1
Description: Saturated sand with organics
Phi (degree): 28.00
Unit Weight (pcf): 110.00
Cohesion (psf): 0.00
Ground Water Table: At Grade
Neglected Depth (ft): 0.50

PILE INFORMATION:

Pile Type: Diamond Pier (4 pins)
Pin Length (ft): 5.25
Angle (degree): 40.00
Pin Diameter (in): 1.900
Wall Thickness (in): 0.145
Pin Type and Grade: Pipe, 36ksi
Effective Depth (ft), D: 3.04
Effective Length (ft), B: 5.95
Effective Pile Width (ft): 0.40

Program automatically corrects Dry Unit Weight for Buoyant Weight when Ground Water Table "At Grade" is indicated.

Program corrects total Pin length indicated for actual active length.

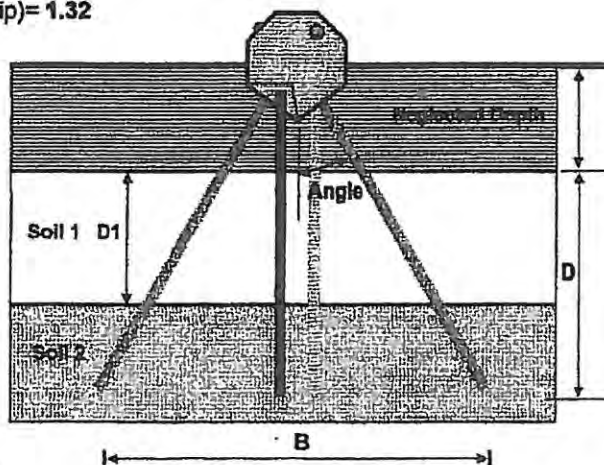
PILE CAPACITY:

Compression: C_ultim (kip)= 11.97
F.S.=2: C_allow (kip)= 5.99
Uplift: U_ultim (kip)= 2.57
F.S.=1.5: U_allow (kip)= 1.71
Lateral:
Parallel to Pins: L1_allow (kip)= 1.32
Perpendicular to Pins: L2_allow (kip)= 1.32

All capacities are calculated separately.

CALCULATION DATA:

Bearing Capacity Factors:
Nc=31.60
Nq=17.80
Nr=14.60
Pressure at Base (psf)=144.84
Arching Factor=2.5
Allowable Deflection (in)=1
Allowable Bending Strength (ksi)=24



* Soil 2 - Not Used



1055 Andrew Drive, Suite A
West Chester, PA 19380-4293
tel 610.840.9100 fax 610.840.9199
www.advancedgeoservices.com

October 3, 2007

Longwood Gardens
1001 Longwood Road
Kennett Square, PA 19348

2007-1974-00

Attention: Greg Ehrhardt

Reference: Evaluation of Foundation Bearing Conditions
New "Treehouse" Pin Foundations

Gentlemen:

At your request, Advanced GeoServices was on site earlier today to evaluate the foundation bearing conditions for the new "treehouse" observation platform at Longwood Gardens. This work was performed as detailed in our proposal no. 2007-P-999-G dated September 18, 2007.

We understand that you will use several Pin Foundations® to support this new structure. One test pit was excavated within the proposed structure area to evaluate the soil conditions for foundation support. The observed subsurface profile consist of the following:

- 0 - 0.5 feet Topsoil (gray brown organic sandy silt)
- 0.5 - 4.5 feet Residual Soil (medium dense moist brown silty fine sand)
- 4.5 - 6.0 feet Decomposed Rock (medium dense moist brown fine sand, trace silt,
with visible relic rock structure)

No groundwater was encountered in the test pit (depth of excavation = 6 feet).

These observed materials are typical of the weathering profile of the underlying felsic gneiss bedrock. They are stable soils/saprolite that can be easily excavated with conventional earth excavation equipment. Based on our experience within this geologic formation and the observed conditions within the test pit, we recommend using the following soil parameters for foundation design:

Unit weight (γ): 125 pounds per cubic foot
Friction angle (ϕ): 30°
Cohesion (c): 0

If you have any questions regarding this issue, please contact us.

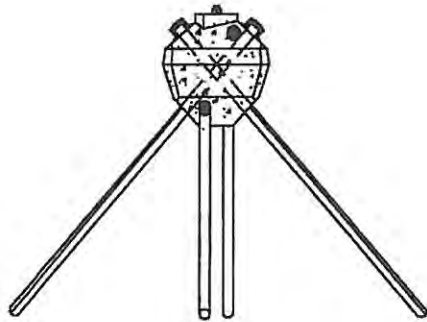
Very truly yours,

ADVANCED GEOSERVICES

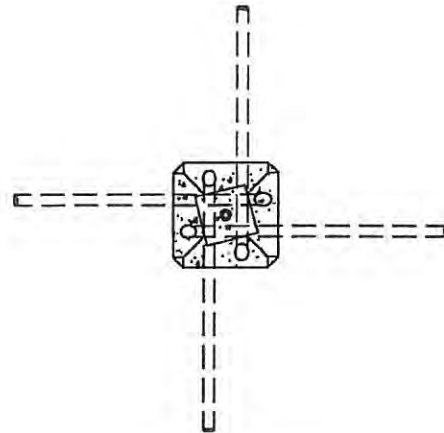
Paul F. Marano, P.E.
Senior Project Consultant

PFM:car



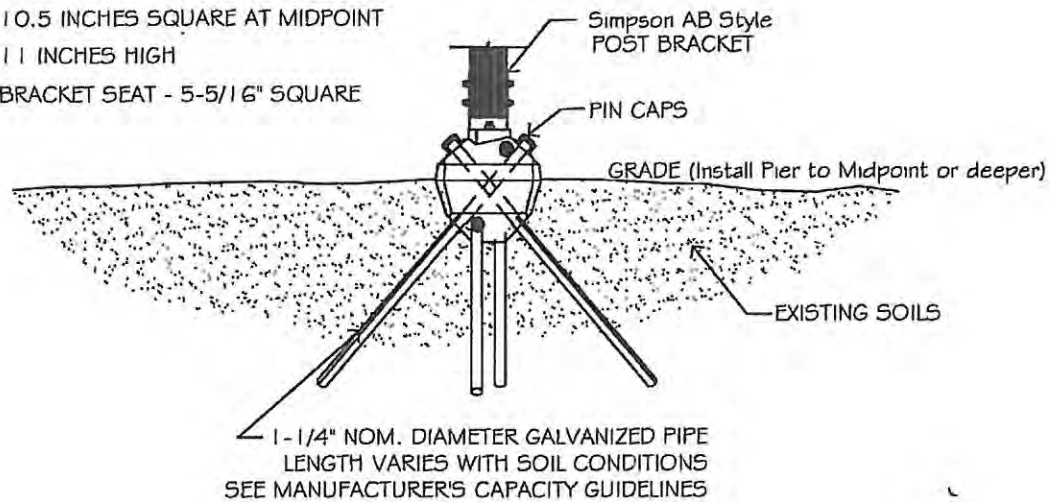


ELEVATION W/ PINS



PLAN VIEW W/ PINS

WEIGHT 60 LBS. (CONCRETE ALONE)
 10.5 INCHES SQUARE AT MIDPOINT
 11 INCHES HIGH
 BRACKET SEAT - 5-5/16" SQUARE

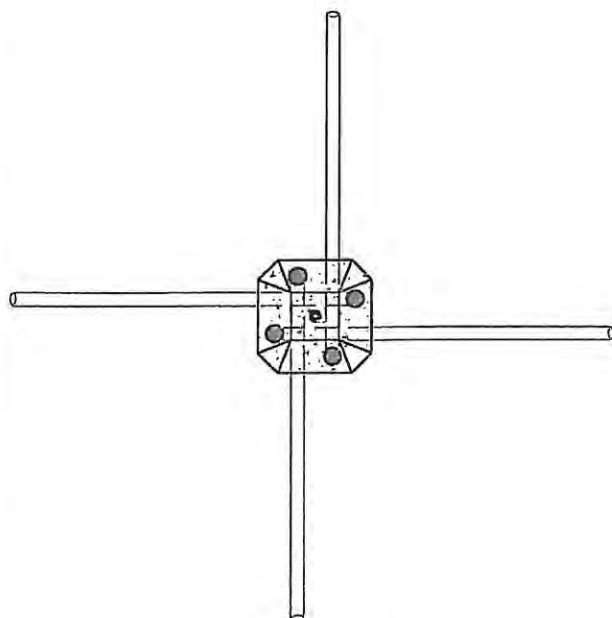


DIAMOND PIER DP-75

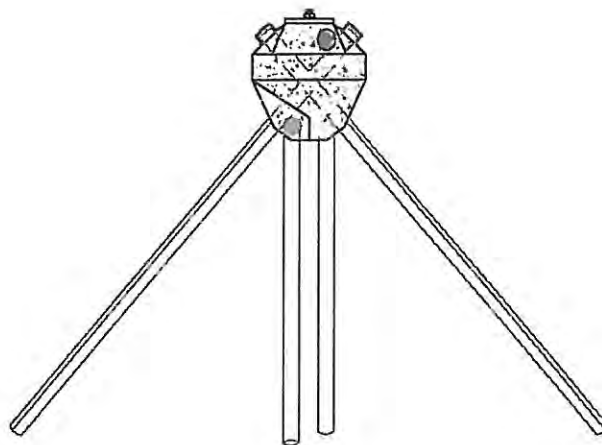
US PAT. #5039256, #6578333, & 7326003

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PIN FOUNDATIONS, INC.
 8607 58th AVE. NW
 GIG HARBOR, WASHINGTON 98332
 (253) 858-8809

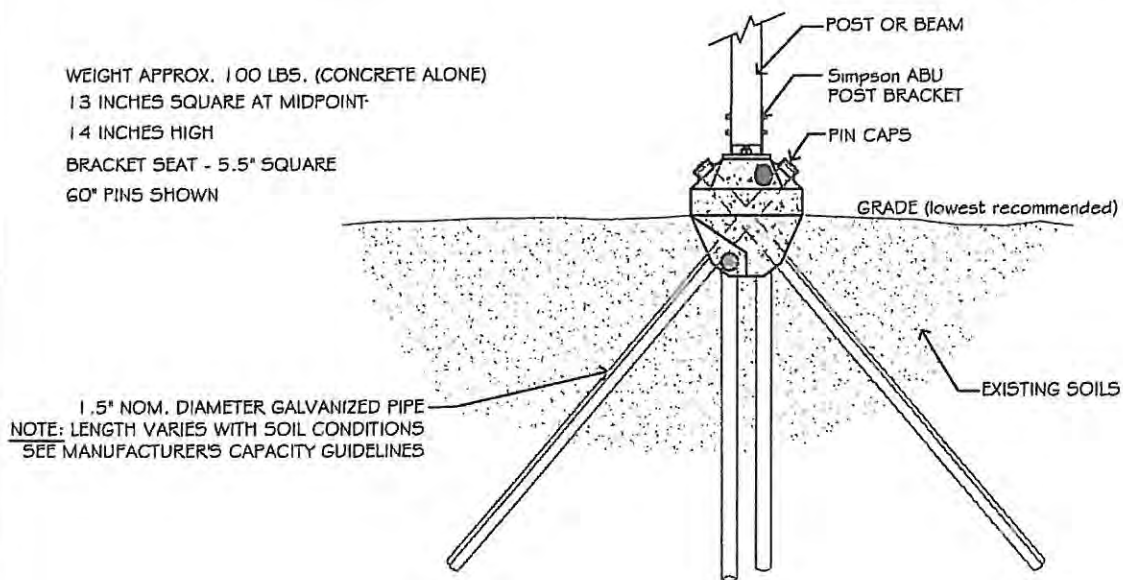


PLAN VIEW W/ 5.25 FOOT PINS



ELEVATION W/ 5.25 FOOT PINS

WEIGHT APPROX. 100 LBS. (CONCRETE ALONE)
 13 INCHES SQUARE AT MIDPOINT
 14 INCHES HIGH
 BRACKET SEAT - 5.5" SQUARE
 60° PINS SHOWN



DIAMOND PIER™ DP-100

US PAT. #5039256 & #6578333

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 GIG HARBOR, WASHINGTON 98332
 (253) 858-8809



www.pinfoundations.com

253 858-8809 ph

858-8607 fx

Federal, State or Municipal Agencies that have specified or permitted the Diamond Pier.

US Fish and Wildlife Service
National Park Service
Army Corps of Engineers
US Bureau of Land Management
US Forest Service
Massachusetts Metropolitan District Commission
Martha's Vineyard Land Bank Commission
Yosemite National Park
Washington Department of Natural Resources
Palouse Clearwater Environmental Institute (Idaho)
Idaho State Parks
Washington State Parks
Oregon State Parks
Marin Municipal Water District (California)
Westchester County Planning Department (New York)
Texas Parks and Wildlife Department

City of:

Seattle, WA
Olympia, WA
Newport, OR
Eugene, OR
Raleigh, NC
Plainfield, IL
Skokie, IL
Tacoma, WA
Columbus, OH
Juneau, AK
Manchester, NH
Kirkland, WA
West Seneca, NY
Brookline, MA
Madison, ME
Folsom, CA
Park City, UT

All other projects in various jurisdictions where an architect, engineer, or builder has secured permits for the Diamond Pier are not listed.

Projects by Location
thru Fall 2006

Washington - 61
California - 20
Massachusetts - 20
Oregon - 16
Maine - 1
New York - 8
Illinois - 9
Texas - 8
Colorado - 9
Utah - 8
Ohio - 5
North Carolina - 4
South Carolina - 3
Idaho - 3
Florida - 3
Wyoming - 3
Alaska - 3
New Hampshire - 1
Rhode Island - 1
Pennsylvania - 1
Georgia - 1
Michigan - 1
Virginia - 1

International

Canada - 3
Japan - multiple

Over 200 projects,
Over 12,500 installed piers,

Appendix D

Memorandum of understanding between the Roanoke
County Sheriff's Office and Parks, Recreation and
Tourism Department about inmate labor



MEMORANDUM

Office of the Sheriff
County of Roanoke, Virginia

TO: Clay Goodman, County Administrator

FROM: Michael G. Winston, Sheriff

DATE: March 23, 2011

SUBJECT: Inmate Work Program

I am writing on behalf of Parks and Recreation and the Sheriff's Office to ask that the inmate program be continued in Fiscal Year 2011/12. As we first discussed, Parks and Recreation's budget was reduced over the past two fiscal years making it more difficult to complete special projects for the improvement to the grounds, landscaping, outdoor structures at county properties, snow removal, and the pickup and delivery of surplus property. This program has certainly filled a void in the level of services that could be provided by Parks and Recreation. The program has been a "win – win" situation for the county, as well.

The inmate work program began on August 30, 2010 and our staff has worked successfully with Parks and Recreation to complete numerous projects throughout the County. The staffing for this program consists of a full time deputy sheriff who supervises five inmate workers. These inmates are thoroughly screened and only those who meet a certain criteria are used on the program. The three main objectives of this program are to: i) supplement the Parks and Recreation's workforce to address special projects throughout the County that otherwise could not be completed without the labor provided by the inmate work program; ii) provide work skills and work habits to inmates that will assist inmates to obtain employment once released, and iii) allow eligible inmates to receive days off their sentences for working which saves the County in incarceration costs.

Since August, the inmate work program has completed projects at the Green Ridge Center, Fleet Center, Public Safety Center, numerous parks, libraries, Court Complex, Social Services, Catawba Center, Camp Roanoke, Craig Avenue Center, Brambleton Center, Fire and Rescue centers and baseball and soccer complexes. The work consisted of general landscaping projects, placing mulch, brush removal, tree removal, seeding, leaf removal, mowing, painting, cleaning, moving surplus property, etc.

For the first eight months of the program, the deputy's salary and benefits (\$39,040) were funded by surplus funding from the Sheriff's FY2009/10 budget. The cost of staff uniforms, inmate clothing, protective equipment, vehicle maintenance, and fuel was funded by the Sheriff's current budget. Parks and Recreation provided the cost of an equipment trailer, walk behind mowers, trimmers, hand tools and other equipment from their budget. Starting on July 1, 2011, Parks and Recreation

will fund the cost of the deputy's salary (\$40,604.80 includes benefits), equipment and supplies, by taking over select mowing sites previously handled by a paid contractor and two part time maintenance workers. These sites include the Public Safety Center, Public Service Center, County Fleet Management, Roanoke County Courthouse, Roanoke County Library Headquarters, CRT entrance, CRI Main Industrial Park, Valley Tech Industrial Park, and landscaping the 14 improved medians/gateways to support the "Welcome to Roanoke County" signs, which will earn approximately \$40,605 in annual revenues. The entire salary cost will be transferred from the Parks and Recreation's budget to the Sheriff's Budget to cover the cost of the deputy and the cost for minimal equipment. Therefore, no additional funding is being requested for this program.

The program cost values and savings are determined by three methods. Method A represents the total value of work, based on values assigned by Parks and Recreation personnel, to specific tasks completed by the work crew. These values are based on the premise that Roanoke County would pay a contracted service to complete the same task. It is estimated that we will save approximately \$68,000 by this method up to the end of this fiscal year. The deputy's salary and the cost of operating the program's vehicle was deduced from the total saved.

Method B represents the total value of work, based on the value of labor, calculated on an hourly rate of \$10.26, multiplied by the total number of hours worked, times the number of inmate workers. This rate of pay equals the rate paid to a grade 12 Parks and Recreation's Maintenance worker, minus benefits. It is estimated that we will save approximately \$37,000 up to the end of this fiscal year. The deputy's salary and cost of operating the program vehicle was also deduced from this total.

Method C represents the final adjustments in actual savings for inmate workers earning Judicial Good Time (JGT) credits to reduce their sentences. Felony sentences earn only 3 days of good time for every 60 days worked whereas misdemeanor sentences can earn 1 day for every day worked. Since the program began, a total of 18 inmate workers were assigned to the program, which included 13 felony sentences (72%) and 5 misdemeanor sentences (28%). There is a savings of \$54.93 for each day a person is diverted from jail. This fiscal year, the County will realize a savings of \$5,712.72 for reduction in sentences, due to inmates earning JGT for participating in the program.

Pete Haislip and I have evaluated the program and have found it to be successful and recommend that the program be continued. It is estimated that the County could save up to \$68,000 this fiscal year, which includes any days saved through Judicial Good Time Credits. The funds to complete these projects were not budgeted by Parks and Recreation, so any savings realized will not be found in the Parks and Recreation's budget. However, since these projects were not budgeted for, the projects and improvements would not have been completed without the assistance of the inmate work program.

I appreciate your consideration of this request. Please contact me should you need any additional information pertaining to our request.

C: Dan O'Donnell, Assistant County Administrator
Mark Courtright, Assistant Director of Parks
Major Charlie Poff

Appendix E

Record of staff hours for the project

**Walrond Park Trails Project
Roanoke County Department of Parks, Recreation & Tourism
DCR Recreation Trails Grant, VRT-217
OCA 586300, Object Lvl 3: 8904**

STAFF HOURS - CONSTRUCTION ONLY (EXCLUDES INMATE CREW LABOR)

Timesheet Summary

[illegible]

Total Staff Hours	3,474	\$ 54,798.66	TOTAL
--------------------------	--------------	---------------------	--------------

Total Staff Hours: Reimbursement #1	1,067
Total Staff Hours: Reimbursement #2	987
Total Staff Hours: Reimbursement #3	1,420

Appendix F

Letter of approval from Virginia Department of
Conservation and Recreation for overage funds to be
paid towards the project

Douglas W. Domenech
Secretary of Natural Resources



David A. Johnson
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street

Richmond, Virginia 23219-2010

(804) 786-1712

2 February 2012

Mr. Lon Williams
Landscape Architect/Park Planner
Roanoke County Department of Parks, Recreation & Tourism
1206 Kessler Mill Road
Salem, Virginia 24153

Dear Mr. Williams:

The request to increase the grant award amount on the Recreational Trails Program grant for VRT#217: Walrond Park Trails has been approved. Additionally, the project deadline has been extended to allow processing of the final reimbursement within the approved project timeframe.

The additional funding to assist the county with higher than expected expenses associated with the platform boardwalk across the jurisdictional wetland were made possible through under runs on other projects selected for funding the same year as yours.

Enclosed are two project agreement amendments. Please sign and date both, retain one copy for your files, and return the other to me as soon as possible.

Should you have any questions or need additional information, please contact Synthia Waymack at 804.786.4379 or Synthia.Waymack@dcv.virginia.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Danette M. Poole", is written over a horizontal line.

Danette M. Poole
Planning and Recreation Resources Director

Enclosures

*The Department of Conservation & Recreation
The Virginia Recreational Trail Grant Program
Amendment to Project Agreement*

Sponsoring Agency: Roanoke County

State Project Number: NRT-07-FY (001) - VRT-217, Amendment 3

Project Title: Roanoke County, Walrond Park Trails

The Virginia Department of Conservation & Recreation (DCR) and **Roanoke County** mutually agree to amend the Project Agreement ("the Agreement") by including additional terms and conditions, none of which supersedes any terms or conditions of the original Agreement. The following terms and conditions are incorporated into and form a part of the Agreement to which they are attached for all purposes.

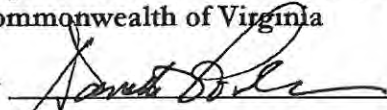
Extend project deadline to April 2012.

Increase maximum grant award amount to \$68,180.53. This represents an \$11,180.53 increase over the original grant award to cover higher expected expenses associated with the elevated platform through the jurisdictional wetland areas.

In witness whereof, the parties hereto have executed this agreement as of the dates entered below.

**Department of Conservation & Recreation
Commonwealth of Virginia**

By



Date

2/3/12

Danette M. Poole

Planning & Recreation Resources Division Director

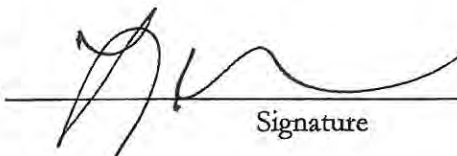
Roanoke County

Name

Lawrence T. Williams, Jr.

Please Print

Name



Signature

Date

2/10/12

Project Manager e-mail address and telephone:

Williams@roanokecountyva.gov
540-387-6078 x503