

9-30-2014

Date: September 30, 2014
From: Friends of the Capital Crescent Trail
To: Town of Chevy Chase (Townofchevychase.org)
Re: Request for a contribution

Summary:

Friends of the Capital Crescent Trail (FCCT) requests a contribution of \$25,388. The requested funds, together with funds contributed by Trail supporters (including Town and County residents) will be used for five projects. The projects will produce and disseminate information that will further support the FCCT's efforts to ensure that the proposed Purple Line complies with applicable Federal and State Law, including protection of endangered species, and that the public and decision-makers can find ways to preserve the trail at its best while meeting transit needs.

Requesting organization:

FCCT is a nonprofit organization that advocates for the continued existence of the Capital Crescent Trail. FCCT works to obtain Trail amenities and holds regular Trail events for the community.

Amount requested:

\$25,388

Anticipated timing of the expenditure of the requested funds:

November 2014-September 2015

Benefits to the Town and its residents, which would result from the contribution:

Many Town residents use and enjoy the Trail and some have property that abuts the Trail. The requested funds will help secure for our Town and its residents a Purple Line that adequately protects endangered species, complies with the Clean Water Act and other legal requirements and stormwater runoff standards, and includes mitigation or alternative designs that preserve the Trail at its best and effectively meet transit and sustainable development needs. The current trail is a valuable recreational and commuting resource for residents of the Town and of many other neighborhoods and a valuable greenway in this ever more densely developed urban area. A tree canopied trail with the most modern pervious surface and safe crossings for all without the competition of two rail lines would be an even greater benefit for us, our neighboring communities and the environment on which we depend.

Degree of support, financial and other, from other community entities, municipalities, individuals:

Financial support: FCCT is attracting donations large and small from residents and Trail users both within the Town and elsewhere in the County for its efforts to save the Trail. \$17,000 in check and online donations from individuals have been contributed since the 5K race to Save the Trail on May 24, 2014. This is in addition to the \$15,000 grant from the Town of Chevy Chase in early 2014.

Volunteer support: Thousands of hours of professional and other time have been donated by Town residents to this effort.

In-kind support: The Center for Biological Diversity has contributed to the overall effort in kind by filing a petition to the U.S. Fish and Wildlife Service (FWS) asking the FWS to develop a Recovery Plan for the federally-listed endangered Hay's spring amphipod. We expect that the Center for Biological Diversity will also soon petition for the designation and protection of Critical Habitat for the Hay's amphipod. The Center may also include in the petition a request that habitat that is essential for the conservation and recovery of the Kenk's amphipod by identified in time for the Service to propose designating that habitat, as critical, and thus protected from any federally funded or permitted degradation, in conjunction with the expected proposal in 2016 to list the Kenk's as endangered. The Kenk's amphipod is listed as endangered under Maryland law, and is expected to be listed at the Federal level by 2017.

Projects to be funded:

Background

The requested funds will be used for projects that will support FCCT's ongoing efforts to ensure that the Purple Line does not violate federal and state Law or cause harm to the endangered amphipods in the Coquelin Run and Rock Creek watershed. The research projects will help conserve the natural systems, and in particular groundwater seeps, freshwater streams, and forested buffers, of which amphipods are both components and indicators.

This past spring, with the support of a charitable donation from the Town, FCCT contracted with Dr. David Culver of American University, a nationally-recognized expert on amphipods including those in this region, to conduct an amphipod survey of the Coquelin Run and Rock Creek watershed area along and immediately downstream of the proposed Purple Line route.

Dr. Culver searched for sites that three endangered amphipod species might inhabit. The survey identified a number of formerly unknown habitable sites, in or adjacent to the right of way or downstream of it north of the District. Dr. Culver will re-survey these sites this winter to try to ascertain if they are inhabited. Even if not inhabited, identification of these sites was important, because they may become part of the officially designated Critical Habitat needed for the species' recoveries. Because they dwell in underground seeps, are so few, and only come to the

surface under optimal conditions in the winter and early spring, these creatures are very difficult to survey.

During the coming winter, Dr. Culver will revisit the sites he located this past spring to try and capture specimens of the endangered amphipods (this work will complete his original contract with FCCT). Depending on the availability of the Environmental DNA testing procedures for the three endangered species, and upon the habitat conditions, such as water flow and temperature, Dr. Culver may need to visit the seeps and wetlands that comprise potential habitat later than January 2015 or survey the areas twice, once in the winter of 2014-15 and once in the late fall of 2015 or the winter of 2015-16 for optimal results.

1. DNA sampling tool

Background. DNA sampling tools are an increasingly widely used aid to researchers in identifying the presence of rare or elusive species. Obtaining specimens of endangered amphipods is extremely difficult because not only do they live deep inside seeps, but they also are rare. A DNA sampling tool for amphipods would detect amphipod DNA in water and sediment collected from seeps and enable researchers to determine that a seep is occupied even if they do not capture a specimen. The techniques for developing DNA tests are well established.

Description of proposed project: The amphipod expert group coordinated by the University of South Dakota will develop DNA Bar Coding and environmental DNA tests for the three endangered amphipod species in our area. They will work in consultation with Dr. David Culver of American University and the relevant federal and state agencies. For a detailed description, see Appendix 1.

Reason project is needed: During the late fall of 2014 and/or early 2015, depending on the conditions in the field, Dr. David Culver will survey the seeps identified this past spring in the Coquelin Run and nearby Rock Creek watershed for the presence of species of amphipods listed as endangered by Federal and Maryland wildlife agencies. These three species are rare and elusive. Therefore, he may not find them even if they do inhabit the seeps. Having a DNA test to supplement his survey would make it much more likely that he could detect the presence of the species.

Requested funds: **\$20,388.** (See appendix 1 for detailed budget.)

2) Stormwater Run-Off, Water Pollution and Hydrological Review –

Background.

The clearing of trees and vegetation from the Trail and related increased development at Connecticut Avenue and elsewhere keyed to the Purple Line will lead to substantially increased levels of water run-off. The construction can also pollute and otherwise affect the groundwater. These hydrological and water quality changes can have both acute and chronic impacts on the ecosystem and in particular, the endangered species of amphipods that occupy the Coquelin Run

and Rock Creek watersheds. The Final Environmental Impact Statement did not adequately or accurately reveal the net increase and gross total storm water run-off levels in this part of the Rock Creek watershed that will result from the Purple Line's construction, operation and directly related development. It also did not assess the extent to which these will affect the amphipods or violate the Federal Clean Water Act and state and local clean water regulations, or result in additional violations of the Clean Water Act by the County and the Town of Chevy Chase and other townships in the area. Wildlife agencies contend the Purple Line's construction will not affect the amphipods. Two biological expert affidavits concluded that the Line and related development will negatively affect them. Experts in the forests, hydrology and related regulations of Montgomery County can provide important new information about these impacts. Moreover, a July 30th letter from the Director of the Montgomery County Department of Environmental Protection to a resident of the Town explained that the changing design and engineering for the Purple Line and the Maryland Transit Administration's refusal to comply with the (stricter) Montgomery County clean water regulations make it impossible to predict the level of additional storm water run-off from the Purple Line. A Maryland Court ruled in late 2013 that the Clean Water Act permit approved by the State for Montgomery County, and specific towns within it, including the Town of Chevy Chase, is in violation of the Federal Clean Water Act and remanded the issue to the County to promulgate new regulations. We expect these new regulations will require more numerous and detailed criteria and a more rigorous monitoring process. All of these make it very likely that the Final EIS did not adequately reveal levels of run-off that could violate the Clean Water Act and that the new information about changes in the design will require at least a Supplemental Environmental Impact Assessment or Statement. Stormwater runoff is an increasingly important issue facing our region, and the Town and its residents, today. Accurate representation of the water run-off levels is very important because the decisions of other agencies about the new regulations and building permits, as well as various aspects of the Purple Line project and surrounding development, depend on it.

Description of project: Doug Lohmeyer, P.E., of Montgomery Consulting and David Brown, land use attorney of Knopf-Brown, will co-author a report on "The status and interaction of the local, state and federal storm-water run off and water pollution requirements affected by the Purple Line". The research will include interviews of the staff in the County's Planning Commission and Environmental Protection Department to confirm their understanding of the Line's impact on current water flows, run-off in the area and likely affects of the Purple Line and related development. Jennifer Chavez of Earthjustice in Washington, D.C. (who is the lawyer for the plaintiffs in Anacostia Riverkeeper, et al. v. Montgomery County) and Eric Glitzenstein, of Meyer, Glitzenstein and Crystal, and amphipod experts David Berg and David Culver will review the draft report.

Reason project is needed: The report will inform the Town and FCCT as well as other decision-makers, including any courts reviewing the adequacy of the Environmental Impact Statement and compliance with related laws, more fully about the legal, permitting, and planning implications of the Purple Line and other development. In particular this will address stormwater runoff in the area within which our Town is located. This Clean Water Act/Stormwater Review would also provide Friends of the Capital Crescent Trail, and the Town and all of its residents, a much clearer understanding of the likely impact of the Purple Line and related development on the stormwater flooding and erosion increases they will face and the possible increase in retention requirements for southwestern Montgomery County and the

Bethesda-Chevy Chase area in particular. All audiences and decision-makers will also understand the likely choices between recovery or loss of trees and wildlife in the area. In particular this applies to the impacts on amphipod habitat. If storm water run-off, flooding, and erosion resulting from construction of the Purple Line and related development would substantially reduce amphipod habitat, then stricter controls on any further development and other threats to the species would be needed. But if that habitat is expanded through conservation now, and planned recovery work soon, that success can provide more leeway for moderate redevelopment and land management options.

Requested funds: \$5000. Includes interviews with local officials, field survey and legal research and writing and review fees of \$500 for Dr. Culver and Eric Glitzenstein.

Checklist of materials needed:

I Written Request

The request must be submitted in writing to the Town Office on the applicant's letterhead and shall be signed by the applicant's executive director or authorized board representative.

At a minimum, the proposal must contain the following information.

- Amount requested
- Anticipated timing of the expenditure of the requested funds
- Benefits to the Town and its residents which would result from the contribution
- If appropriate, degree of support, financial and other, from other community entities, municipalities, individuals
- Concise narrative describing the project for which funding is sought, the proposed use of the requested funds and the need for funding

All requests must also include the following information and documentation. The Town Council, may at its discretion, request additional information.

- List of current board members and employees
- Proposed project budget, including income and expenses and a list of other grants and donations secured and/or being sought for the project
- Operating budget for the current year, including income and expenses
- Copy of the most recent Federal Form 990
- For nonprofit organizations, evidence of Federal exemption status under IRS Code Sections 501 (c) (3) and 509(a) (1) or (2)

- Annual report and/or statement on the applicant’s purpose, history and previous accomplishments and current activities

II Presentation to the Council

All requests for a Town contribution shall be included as an Agenda item for Town Council discussion at a public meeting, scheduled by the Town. A Town resident must present the request in person to the Town Council at this public meeting. At the public meeting, the Town Council shall determine if the request meets the criteria. If the Town Council determines that the request does not meet the criteria, the applicant will be notified in writing of the Council’s decision.

III Public Hearing

If the Town Council determines that the request meets the criteria as an initial matter, then the Council shall schedule a public hearing on the request. Final action by the Town Council will follow the public hearing. If the Town Council votes to fund a request, an award letter agreement will be sent to the applicant outlining terms and conditions of the contribution. This letter agreement shall be signed and dated by the applicant and returned to the Town Office in a timely fashion.

CRITERIA FOR CONTRIBUTION

The Town Council may make, but shall not be required to make, a contribution if the following criteria set forth in the Contribution Policy are met.

- The Town Council may make expenditures for public purposes, including but not limited to grants and donations to organizations providing services or programs benefiting the Town and its residents.
- The contribution will provide a direct and material benefit to a significant number of Town residents.
- The contribution will support a capital improvement or other extraordinary need of a public institution, program or facility, as distinguished from supporting a current operating budget.
- The contribution will supplement and not supplant funds from the requestor's primary funding source.
- The contribution is important to the success of the project.

CONTRIBUTION REPORTING REQUIREMENTS

The applicant must use the contribution for the purposes specified in the written request and as approved by the Town Council. Any proposed change in the use of the funds and/or to the timetable for the use of the funds must be submitted in writing and approved in advance by the Council. All recipients must provide the Town with a final report and receipts documenting that the contribution was used for the purpose(s) for which it was made. The Town Manager will ensure that such documentation is received in a timely fashion.

Appendix I - Environmental DNA Sampling

Project Description

'DNA barcoding' is a technique for identifying species using a short, standardized gene sequence. DNA barcoding has become a common and powerful method for conservation and management of threatened and endangered species. Creation of a barcoding database, i.e. a library of DNA sequences from known individuals of a species, allows for: 1) fast and efficient identification of new populations, which can help extend the known range of threatened species; 2) easy identification of potentially new species that have not yet been described; 3) potentially identifying the presence of species based on environmental samples; and 4) estimates of the genetic diversity of a given population and/or species, which can help in determining the size and structure of small populations.

The first step in creating a barcode database is to determine appropriate regions of DNA useful for the species of concern. Advancements in sequencing technology have vastly improved the ability to scan the genome and identify such useful regions. In particular, next generation sequencing technology (i.e. high throughput sequencing) makes the sequencing of large portions of an organism's genome fast and affordable. Using the information from next generation sequencing, a suite of genetic markers tailored to the species of interest is possible. Once these markers have been identified, the more basic Sanger sequencing methods can be used to sequence each marker from a number of individuals of each species.

For this proposal, the Principal Investigators (Dr. Megan Porter, Dr. Steve Taylor, and Dr. Matthew Niemiller), will provide professional services to the Friends of the Capital Crescent Trail in the generation of genetic resources for *Stygobromus* species found in Maryland, including *S. tenuis*, *S. pizzini*, *S. sextarius*, *S. kenki* (if specimens are obtainable), and *S. hayi* (if specimens are obtainable). Additionally, to make sure the identified genetic markers are specific for *Stygobromus*, one additional local amphipod species from different genera (*Crangonyx* sp.) will be analyzed as genomic references. If appropriately preserved specimens are obtainable, DNA barcoding databases will be generated for three endangered amphipod species: *Stygobromus hayi*, *S. kenki*, and *S. sextarius*. Because the targeted species are threatened and endangered, we propose to sequence a minimum number of individuals from each species (5-10), based on availability, to create the barcoding database. Finally, once genetic markers have been developed that are specific to the genus and/or the species of concern, we will use these markers to test suitable habitats where *Stygobromus* have not previously been found for the presence of the species of concern using environmental DNA (e.g., eDNA) methods. Caveats of the eDNA methods include that negative results have no value (i.e. no inferences can be made). Additionally, these methods have not previously been tested for groundwater amphipods, so detection limits are unknown. However, a positive result, if obtained, is a clear indication that *Stygobromus* have recently utilized the spring habitats in question and can be a powerful tool for identifying habitats for difficult to collect species such as groundwater amphipods. We propose to collect 1L water samples from 5 seeps where *Stygobromus* have not previously been recorded but appear to be suitable habitat, as well as from 2 springs

known to harbor healthy populations of groundwater amphipods to use as positive controls. These water samples will be taken two times throughout the winter of 2014–2015, and stored in freezers until the genetic resources are developed in order to perform the eDNA methods.

Principal Investigators & Qualifications

Megan L. Porter, Ph.D., is an Assistant Professor in the Department of Biology at the University of South Dakota. She received her Ph.D. from Brigham Young University in the field of molecular biology and evolution, including many studies of subterranean and cave-adapted species. She has published over 35 papers in her field, including 14 papers concerning aspects of cave biology. Additionally she co-authored the book *Cave Life of the Virginias: A field guide to commonly encountered species*. She is currently a member of the *Stygobromus Working Group*, a group of researchers dedicated to the study, conservation, and management of subterranean amphipods of North America. As part of this group, she, Dr. Taylor, and Dr. Niemiller have initiated the creation of a barcoding database of *Stygobromus* species found throughout Virginia and West Virginia.

Steven J. Taylor, Ph.D., is an Assistant Research Program Leader in the Illinois Natural History Survey at the University of Illinois. He has a Ph.D. in zoology and more than 70 peer reviewed publications, with many of these focused on cave ecosystems. His laboratory studies conservation, biology and management of caves, karst and groundwater resources. He is an active member of the *Stygobromus Working Group*, and was the lead author on a recent *Stygobromus* species description.

Matthew L. Niemiller, Ph.D., is a Postdoctoral Research Associate at the Illinois Natural History Survey at the University of Illinois Urbana-Champaign. He has over 10 years of research experience in biospeleology, including cave bioinventories, molecular phylogenetics and phylogeography, and conservation assessments. Matthew received his B.S. and M.S. degrees in Biology from Middle Tennessee State University and his Ph.D. in Ecology and Evolutionary Biology from the University of Tennessee-Knoxville. His Master's thesis and Ph.D. dissertation focused on the phylogenetics and phylogeography of cave vertebrates, including cave salamanders and cavefishes. He has published 25 peer-reviewed journal articles, five book chapters and proceedings, and 11 government reports on cave fauna, in addition to coauthoring the book Cave Life of TAG: A Guide to Commonly Encountered Species of Tennessee, Alabama and Georgia, published by the Biology Section of the National Speleological Society and funded by CCV (to Dr. Megan Porter and others). Matthew's research has been funded by several state agencies and cave-related organizations, including the Alabama Department of Conservation and Natural Resources, Cave Research Foundation, Kentucky Department of Fish and Wildlife Resources, National Speleological Society, and Tennessee Wildlife Resources Agency. Matthew also serves as managing editor of the journal *Speleobiology Notes*.

Budget

Next Generation Sequencing \$4,780.00

Molecular supplies	\$3,000.00
Collection supplies	\$600.00
Technology fees	\$250.00
eDNA testing.....	\$4,225.00
University Facilities & Administrative Rates (58.6%)	\$7,533.00
TOTAL.....	\$20,388.00

Budget Justification

Next generation sequencing costs

Costs include DNA shipping charges and genomic sequencing of one individual each of up to 6 groundwater amphipod species (the three *Stygobromus* species of concern, plus related local species for reference). Estimated costs for library preparation (including quality control) and sequencing (one lanes) were obtained from The University of Texas at Austin Genomic Sequencing and Analysis Facility as follows: 300-bp gDNA library, \$180/sample; one lane of 125bp paired-end (PE) sequencing on an Illumina HiSeq 2500, \$3700.

Molecular supplies

We request \$3000.00 for consumable molecular lab supplies, such gloves, pipette tips, PCR and microcentrifuge tubes, PCR reagents, PCR and sequencing primers, etc., as well as for the DNA extraction kits (Qiagen DNeasy Kit, \$155 each) necessary to extract DNA for the preparation of genomic libraries and for eDNA testing.

Collection supplies

The most critical component of successful molecular work is properly preserved tissues. The best way to preserve specimens for DNA work is in 200 proof ethanol, and so we have budgeted for the purchase of a limited amount of this preservative. For eDNA sampling, we have budgeted for \$5.50 per sample for bottles and filters for collecting water samples.

Technology fee

Assembling next generation sequencing data requires computational power, so we have budgeted a small amount of money to pay for time on supercomputing clusters to help with analyses.

(more)

eDNA Testing

We will collect up to 3 replicate water samples from up to 7 springs and seeps, at up to 3 time points throughout the winter of 2014–2015. Sample preparation for each set of

three replicates is \$75, and sequencing costs for all of the samples is based on the price of one lane of next generation sequencing (see above). We are also requesting funds to pay a technician at \$10/hr to conduct the required DNA extractions and eDNA tests for these samples.

Facilities

Next generation sequencing of *Stylobromus* genomic DNA will be contracted out to The University of Texas as Austin Genomic Sequencing and Analysis Facility. Because of the cost of maintaining the instrumentation required for this analysis, it is standard practice in the field to send DNA to larger facilities for this type of sequencing. We will receive the information, and Dr. Niemiller will conduct the required analyses to assemble the data into genomes and identify candidate genetic markers useful for distinguishing the *Stylobromus* species of concern. For this part of the analyses, Drs. Niemiller and Taylor have access to the University of Illinois Campus Cluster, a state of the art facility with over 300 compute nodes, each with two 2.67 GHz Intel Xeon hex-core processors and 24 GB of memory, for a total of 3600 cores. Both Dr. Taylor and Dr. Porter have access to molecular lab facilities that contain all of the equipment required to accomplish the DNA isolation, amplification, and Sanger sequencing of the barcoding markers from individuals from each species. This equipment includes PCR machines, centrifuges, gel-electrophoresis tanks and imagers, NanoDrop spectrophotometers, Qubit Fluorometers, and access to Sanger sequencing facilities. Additionally, both Drs. Taylor and Porter have access to sufficient space in -20°C and -80°C freezers to accommodate storage of tissue samples and DNA extractions produced as part of this project.

Project Provisions

Data generated as part of this study will be provided to the Friends of the Capital Crescent Trail and all interested parties. Generated data will also be available for the investigators conducting the research for current and future studies involving *Stylobromus*. Finally, any genetic data produced as part of this proposal will be provided to public databases, including the National Center for Biotechnology Information GenBank database for molecular sequence data (<http://www.ncbi.nlm.nih.gov>).

Deliverables

The Friends of the Capital Crescent Trail will receive:

- All genomic data, including mitochondrial genomes, generated from next generation sequencing

- A list of genetic markers specifically useful for barcoding the three species of concern
- Information for any positive eDNA results for the habitats of concern

Timeline

(Sequencing contingent on collecting enough appropriately preserved specimens)

Specimen and eDNA Sample Collection	Nov 2014 – Feb 2015
Next Generation Sequencing	Mar 2015 – April 2015
Genome Analysis	May 2015 – June 2015
eDNA testing	July 2015 – Sept 2015

To: Todd Hoffman, Manager, the Town of Chevy Chase

**From: John Fitzgerald, Advisor to Friends of the Capital Crescent Trail (FCCT)
Jim Roy, Member of the Board, FCCT**

Re: Proposal in Support of FCCT Request for a Grant for a Stormwater and Hydrological Review

Date: October 15, 2014

In the Town Council meeting last week, Mayor Strom asked if we could submit a proposal in support of the grant request for \$5000 for a review of the potential physical and legal implications of the likely stormwater and hydrological effects of the construction and operation of the "Preferred Alternative" for the Purple Line as proposed in the Final Environmental Impact Statement and Record of Decision.

The proposal, with budget, is presented below, building upon the description submitted by Jim Roy on behalf of the FCCT in the grant request of September 30th.

**Grant Proposal to the Town of Chevy Chase
Stormwater Run-Off, Water Pollution and Hydrological Review**

Pro-Bono Project Coordinators:

**John M. Fitzgerald, J.D., Advisor, FCCT
Jim Roy, Licensed Realtor & Broker, Board Member, FCCT**

Principal Investigators:

**Doug Lohmeyer, Civil Engineer, Licensed in Maryland (Ret.)
David Brown, J.D., Land Use Attorney, Knopf and Brown**

Expert Reviewers:

Bruce Hall, Civil Engineer, Licensed in Maryland (Pro-Bono)

**David Culver, Ph.D., Biologist and (depending on additional resources of FCCT,
David Berg, Ph.D., Biologist)**

**Eric Glitzenstein, J.D., Environmental Law, Meyer, Glitzenstein and Crystal
Jennifer Chavez, J.D., Environmental Law, Earthjustice Legal Defense Fund (Pro-Bono)**

Introduction

Stormwater runoff is an increasingly important issue facing our region, County, and Town and its residents, today. The clearing of trees and vegetation from the Capital Crescent Trail and related increased development in the Bethesda-Chevy Chase area, and in particular, from Wisconsin Avenue to Connecticut Avenue and eastward keyed to the proposed (non-Metro) Purple Line light rail project is likely to lead to substantially increased levels of water runoff. The construction and more intense development is also likely to pollute and otherwise affect the groundwater. These hydrological and water quality changes can have both acute and chronic impacts on the ecosystem, and in particular, on three state and federally listed endangered species of amphipods that occupy the Coquelin Run and Rock Creek watersheds.

Due to continuous changes in project design, among other factors, the Final Environmental Impact Statement did not adequately or accurately reveal the net increase and gross total stormwater runoff levels or groundwater effects in this part of the Rock Creek watershed that will be likely to result from the Purple Line's construction, operation and development directly related to it. It also did not assess the extent to which these would affect the amphipods or violate the Federal Clean Water Act and state and local clean water regulations, or result in additional or continuing violations of the Clean Water Act by the County, the Town of Chevy Chase and other townships in the area. Wildlife agencies contend the Purple Line's construction would not affect the amphipods. Two biological expert affidavits concluded that the Line and related development would negatively affect them.

A July 30th letter from the Director of the Montgomery County Department of Environmental Protection to a resident of the Town, whose property is being negatively affected by increased runoff from beyond the Town flowing into Coquelin Run and onto his property, explained that the changing design and engineering for the Purple Line and the Maryland Transit Administration's refusal to comply with the (stricter) Montgomery County clean water regulations make it impossible to predict the level of additional storm water run-off from the Purple Line. A Maryland Court ruled in late 2013 that the Clean Water Act permit approved by the State for Montgomery County, and specific towns within it, including the Town of Chevy Chase, is in violation of the Federal Clean Water Act and remanded the issue to the County to promulgate new regulations. We expect these new regulations will ultimately require stricter and more detailed criteria and a more rigorous monitoring process.

Furthermore, in June of 2013, Federal agencies were directed by the President to update their flood-risk reduction standards for all federally funded projects. The resulting Federal Flood Risk Management Standard is expected to take effect in the fall of 2014 as an amendment to Executive Order 11988 and as requirements for the Environmental Impact Statement (NEPA) process. These standards will be designed to ensure that all federally funded or permitted actions affecting water and related land use resources planning, regulating and licensing activities accurately plan to avoid and minimize risks due to climate change and related changes such as increases in rainfall. This is expected to include a substantially widened and deepened definition of flood plains.

All of the above factors make it very likely that the Final EIS and Record of Decision did not adequately reveal effects on the floodplain and on levels of runoff or design flaws that could lead to violations of the Clean Water Act and regulations. It is also likely that the new information about changes in the design of the Purple Line will require at least a Supplemental Environmental Impact Assessment or Statement. Accurate representation of the water runoff levels is very important because the decisions of other agencies about the new regulations and building permits, as well as various aspects of the Purple Line project and surrounding development, depend on it.

This project will allow experts in the environment, hydrology and related regulations of Montgomery County to provide to the Town, its residents and other decision-makers important information about these impacts and a more accurate analysis of the implications for the Town and its residents.

Objectives

- 1. Determine the likely range of potential impacts of the Purple Line light rail proposal on stormwater runoff and related pollution on the Bethesda to Silver Spring section of the proposed Purple Line.**
- 2. Determine the current and likely regulatory standards for clean water and environmental assessment and permitting in the affected area.**
- 3. Recommend steps to ensure that the cumulative impact of the Purple Line and related development are understood and controlled so as to conserve for the Town its living environment and maximum flexibility to manage its land and water.**

The report will inform the Town and FCCT as well as other decision-makers more fully about the legal, permitting, and planning implications of the Purple Line and other development. In particular this will address stormwater runoff in the area within which our Town is located. This Clean Water Act/Stormwater Review would also provide Friends of the Capital Crescent Trail, and the Town and all of its residents, a much clearer understanding of the likely impact of the Purple Line and related development on the stormwater flooding and erosion increases they will face and the possible increase in retention requirements for southwestern Montgomery County and the Bethesda-Chevy Chase area in particular. This will also help inform the planning process for the Bethesda Sector Plan for example, as two of Bethesda's three watersheds flow into Coquelin Run, and much of the Sector Plan design is premised on approval of a Purple Line light rail on the Trail. All audiences and decision-makers will also better understand the likely choices between the conservation and recovery of this environment on the one hand and the loss of trees and wildlife in the area on the other. For example, if stormwater runoff, flooding, and erosion resulting from construction of the Purple Line and related development would substantially reduce the ability of the area to recharge, absorb and retain water, or reduce amphipod habitat, then stricter controls on any further development and other threats to protected species would be needed. But if that habitat is expanded through conservation now, and planned recovery work soon, that success can

provide more leeway for moderate redevelopment and land management options.

Methods

The research will include geographic/hydrological and legal research by the principal investigators supplemented by interviews of the staff of the Town, and the County's Planning Commission and Environmental Protection Department to confirm their understanding of the current and likely future clean water, storm water and related requirements of the County and State, and the potential impacts on current water flows, run-off and other water pollution on the environment of the area as affected by the Purple Line and related development. This will also include an orientation to the habitat of protected species in the area by biological experts.

Jennifer Chavez of Earthjustice in Washington, D.C., who is the lawyer for the plaintiffs in *Anacostia Riverkeeper, et al. v. Montgomery County*, in which the court found the Montgomery County general permit inadequate to meet Clean Water Act requirements, and Eric Glitzenstein, of Meyer, Glitzenstein and Crystal, experts in the environmental impact assessment process, and amphipod experts David Berg and David Culver will review the draft report to ensure that it reflects the best available science and clearly presents the applicable federal law. John Fitzgerald and Jim Roy will coordinate the flow of work and compensation on behalf of FCCT.

Deliverables

Doug Lohmeyer, P.E., of Montgomery Consulting and David Brown, land use attorney and partner in the firm, Knopf-Brown, will co-author a report on "The status and interaction of the local, state and federal storm-water run off and water pollution requirements affected by the Purple Line". Their report will --

1. Determine the likely range of potential impacts of the Purple Line on stormwater run off and related pollution.
2. Determine the current and likely regulatory standards for clean water, stormwater, and related environmental assessment and permitting in the affected area.
3. Recommend steps to ensure that the cumulative impact of the Purple Line and related development are understood and controlled so as to conserve for the Town its living environment and maximum flexibility to manage its land and water.

Jim Roy and John Fitzgerald will write a preface on the meaning the report holds for homebuyers, sellers, developers, officials, and residents of the Town and surrounding neighborhoods.

Credentials, Retained Professionals

Doug Lohmeyer, P.E., of Montgomery Consulting, is a civil engineer who has worked as a consultant to numerous communities and boards in Montgomery County, including the Town of Chevy Chase. He is among the civil engineers most familiar with stormwater controls in and affecting the Town of Chevy Chase.

David Brown -- <http://www.knopfbrown.com/david-w.-brown.html>

Eric Glitzenstein -- <http://www.meyerglitz.com/about-us/eric-glitzenstein.html>

David Culver -- <http://www.american.edu/cas/faculty/dculver.cfm>

Credentials, Pro-Bono Contributors

Jennifer Chavez -- <http://earthjustice.org/about/staff/jennifer-chavez>;
<http://earthjustice.org/features/ourwork/water-wars-qa-with-attorney-jennifer-chavez>

John Fitzgerald is a resident of the Town of Chevy Chase. He is an active member of the District of Columbia Bar. He is currently a consultant and advisor to conservation and related non-profit groups. His previous positions include Policy Director of the Society for Conservation Biology, Multilateral Development Bank Project Director of the Government Accountability Project, Environmental Policy Analyst US Agency for International Development, chief counsel of Defenders of Wildlife, counsel to the Human Resources Subcommittee of the House Civil Service Subcommittee, and Legislative Aide to Rep. Donald J. Albosta (D-MI).

Bruce Hall is a resident of the Town. He works as an engineer and climate change adaptation advisor in the General Services Administration. He has been a Licensed Professional Engineer in the State of Maryland since 1986. He is a member of the American Society of Civil Engineers, and Chi Epsilon and Tau Beta Pi national engineering honor societies.

Jim Roy is a resident of the Town and a Licensed Realtor. He is a member of the Board of FCCT and block captain of the Town.

Budget

Brief principal investigators on habitats of protected species in the Coquelin Run-Rock Creek Watershed & review draft -- Dr. David Culver, 2 hours @\$250/hr. -- \$ 500

Summarize County, State and Federal Regulations pertaining to stormwater and related pollution and permits -- David Brown, 4.5 hours @ \$300 -- \$1350

Review existing information regarding geography and surface and groundwater patterns for the area. Interview local officials, review Record of Decision and latest engineering plans for Purple Line *vis a vis* deforestation and stormwater runoff in construction, operation and development planned to accompany the Purple Line and draft report --
 -- Doug Lohmeyer, 24 hours @ \$100/hr. -- \$2400

Review draft for accuracy in relation to federal assessment, Clean Water Act, wildlife law, and related standards --
 -- Eric Glitzenstein, 2 hours @\$250 -- \$ 500
 -- Jennifer Chavez, 1.5 hours -- pro bono \$ 0
 -- Bruce Hall, 4 hours -- pro bono \$ 0

Coordinate research, reviews, preface and final production:
 -- Jim Roy, 6 hours -- pro-bono \$ 0
 -- John Fitzgerald, 10 hours -- pro bono \$ 0

Printing and Posting \$ 250

Total \$5000

Timeline --

The report will be produced within 35 working days after FCCT has received a check for the grant sufficient to cover the \$5000 requested. That is, we expect it would be available by mid-December 2014.