



**MSU-DNR  
Sustainable Park Planning  
Partnership  
Fall 2012**





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**A RICH HISTORY**



**A Sense of Family and Tradition**



**RUGGED RECREATION**

**Quiet Peace**



# MSU-DNR Sustainable Park Planning Partnership Fall 2012

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Monica Day, M.RD  
Research Administrator  
MSU-DNR Partnership Coordinator

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Pat Crawford, PhD, RLA  
Associate Professor

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Vanessa Warren, RLA  
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Senior Specialist

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**Bass River State Recreation Area**  
Sarah Nichols, PhD  
Associate Professor





## MSU-DNR SUSTAINABLE PARK PLANNING PARTNERSHIP.

The MSU-DNR sustainable park planning partnership is a program that facilitates applied planning and tourism learning at Michigan's State Parks. Michigan was awarded the 2011 National Recreation and Park Association (NRPA) Gold Medal for the top state park system in the nation. The Gold Medal Award honors communities throughout the United States that demonstrate excellence in long-range planning, resource management, and agency recognition. In its winning application, the DNR focused on innovation, such as the Recreation Passport, which is the new funding model for state parks and outdoor recreation in Michigan. Despite recent accolades not all is rosy for the park system. In fact, the system is plagued with budget challenges, not surprising considering it ranks 47<sup>th</sup> nationally in State funding for parks recreation (Melot, Dec 3 2012). The lack of sufficient funding has resulted in a backlog of approximately \$340 Million in basic infrastructure repairs (Hornbeck and Cain, 2009)

If you are a Michigander you are probably aware of the DNR's strong reputation. Vast public lands for hunting, fishing, boating, camping and many other natural resource based recreation activities are closely tied to Michigan's identity. It is not surprising therefore that Pure Michigan tourism campaign leans so heavily on the experiences offered by Michigan's vistas and public lands experiences. This is why I think that the needs of the agency have gone unrecognized by so many. It flies in the face of reason: how an organization so powerful could have such



needs? The numbers tell a different story than our assumptions would lead us to believe. It was only because of my position as a Grant Coordinator with the Michigan Natural Resources Trust Fund several years ago that I was able to discover the great gulf between the responsibilities of the agency and the budget they had to work with. I don't mean to make too much however of this gap. Perhaps it is true of every state agency! Sometimes the facts can be so grim as to be unbelievable. I suspect that the needs around the state in other agencies could be just as compelling, if not more so. Therefore, while there is no denying that there aren't enough resources to take care of all the needed repairs at State Parks, it is equally unlikely that we can cut the pie, and by pie I mean general fund, in such a way to better serve public needs and therefore, I thought, maybe we could consider enlarging the pie? I wondered, "What can Michigan State University bring to its sister agency?" And, specifically, what could my unit, the School of Planning Design and Construction bring?

In talking with a colleague from my days at the DNR, Dan Lord, the Development Program Manager at the Division of Parks and Recreation about what MSU might do to help was answered by his idea of having students come out to a park and use the site as a case for their coursework. Dan was a graduate of our very own Landscape Architecture.

Together we pursued the project with support of our supervisors, coworkers, in the spirit of partnership and serving the common good. We would look for ways to provide great learning for students while also advancing the improvements at the State's parks.



Fall semester 2012 was our second semester working with the DNR State Parks. There were seven classes that used all or a portion of their course to problem solve and design with three sites: Ralph A. MacMullan Conference Center, Bass River State Recreation Area and Petoskey State Park. This booklet illustrates what the students developed and learned as a result of the engagement that fall. There were over 100 students, six classes, six faculty, and thirteen DNR staff contributing time to the planning at these three sites. The products are as incredible and vast. This booklet is an attempt to highlight some of their activity. A complete library of products is housed at MSU and DNR.

It would not have been possible without the generous support of the DNR Division of Parks and Recreation, the dedication of the faculty, the effort of the students and the support from the School of Planning Design and Construction. This group project is part of a larger movement towards addressing the needs of the parks of this state and I hope it

inspires the students to continue to be active in sharing their ideas and skills for the betterment of their communities. The theory is that by applying the best knowledge and practices to the planning challenges at these sites, we can do our part to ensure our state's most treasured assets: its public spaces endowed with forests, woods, dunes, rivers, and fields are amended by facilities of which we are equally satisfied.

To learn more about this project please visit the School of Planning Design and Construction Website where we have a page dedicated to the project:

[http://www.spdc.msu.edu/student\\_services/student\\_parks\\_project/](http://www.spdc.msu.edu/student_services/student_parks_project/)

Sincerely, Monica Day



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## Planning, Design & Construction

### 991: State Park Design

Assoc. Prof: Pat Crawford, PhD, RLA

**Course Description:** PDC 991 is composed of graduate (Masters and PhD) and upper division students with an interest in exploring the design process and working in a collaborative environment with Michigan State Parks. The course is a self-directed, authentic learning experience.

Our group includes students from:

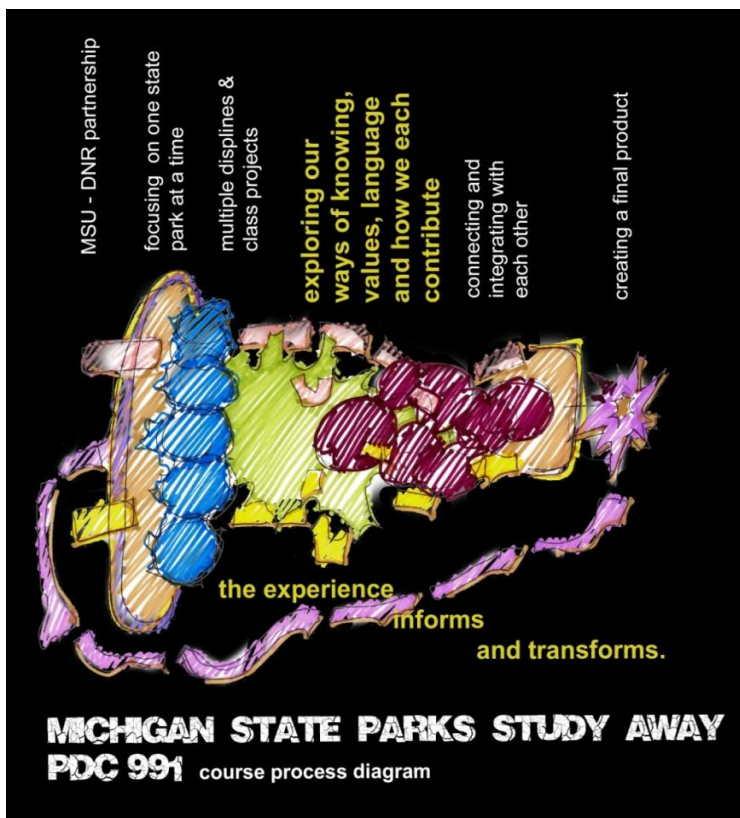
Anthropology  
Bailey Scholars  
Construction Management  
Environmental Design  
Landscape Architecture  
Tourism

The course syllabus is created through a collaborative process exploring our values, learning goals, what we each bring to the group and how we judge success.



#### Our Course Goals and Objectives:

The goal is for the experience to inform and transform our ways of thinking, knowing and connecting. We value the authentic learning experience through a) working with a real client - MI State Parks – and creating a professional product; b) exploring an integrated design approach through connecting with other disciplines and stretching beyond our own disciplinary expertise; and c) exhibiting professional teamwork skills, including being an engaged participant, valuing others, and creativity in product and process.



Our success will be measured in three ways: a) creating a professional final product for the State Parks that satisfies both our standards and the clients; b) our ability to work as a team in respectful and creative ways, bringing our individual expertise to the integrated process; and c) our personal growth and transformation of how we know the world, our disciplines and how these connect.

Building on the master plan, cabin and green design work of the other classes, we created 2<sup>nd</sup> generation design products. The final presentation represents our design products and how this experience has transformed us.



Connecting through Experiences: Our class engaged in several cross-disciplinary experiences, including:

- Two day trip to RAM Center with 70 plus students
- State Park Central Office visit
- LA 344 mid-project presentations
- Mid-Semester Partnership presentations with DNR
- 1<sup>st</sup> generation design comment & input analysis (LA 344 projects)
- Rose Lake Shooting Range, skeet & target shooting with Joe & Murdock
- Creating 2<sup>nd</sup> generation master plan
- RAM Center follow-up visit & review
- Creating Partnership Booklet
- Partnership final presentations









The students produced reports that detail their analysis of the LEED® for Homes sustainable measures as they apply to the cottages considering location, site, energy, air quality, water management, innovation in design, education and awareness, and materials and resources.

It is determined that if designed and constructed in accordance with the students' recommendations, the cottages will likely achieve a minimum certification level of Gold, (60-70 points) the second highest level of certification available from the USGBC.

In addition to a report, the students also produced a "Sustainable Cottage Manual" for educational purposes. The cottage manual outlines sustainable features including measures that conserve energy and protect air, water, and land. The manuals will

accompany each cottage so that guests may learn about the sustainable features that make these cottages environmentally sensitive.

**Ralph A. MacMullan Center**

LEED for Homes Certified

# Green Cottage Education Manual


**CONSERVING ENERGY**

- INSULATING WALLS AND ATTIC TO PREVENT HEAT LOSS
- CELLULOSE INSULATION
- FOAM INSULATION
- CERAMIC TILE UNDERLAYMENT FOR THERMAL INSULATION OF RADIANT FLOOR SYSTEM.
- ONE SYSTEM FOR DOMESTIC WATER HEATING AND SPACE HEATING
- MULTI-ZONE HEATING
- SAVES 15% TO 20% OF ENERGY COMPARED TO FORCED AIR OR STANDARD HYDRONIC OR BASEBOARD SYSTEMS





**CONSERVING ENERGY**

- EXHAUST
- ENERGY STAR LABELLED APPLIANCES
- REFRIGERATOR
- NO FIRE-PLACE: DUE TO HUGE AMOUNT OF HEAT LOSS







**Course Objectives:**

1. To understand design process and apply interior design programming in design projects.
2. To identify and creatively seek a problem that is found in the programming process.
3. To expand awareness of and experience with various approaches to the programming process while building student skills in programming applied to in-depth community outreach projects.
4. To explore the relationship between human behaviors and the built environment that is found in the programming process.
5. To explore research methods used in interior design research, industry, and practice.
6. To study and apply methods by which the programmer, client, consultant and designer participate in the programming process and decision making.
7. To increase students' understanding in sustainable design, building codes, community involvement, and professional approaches to design projects.
8. To condense the programming process into a cohesive and succinct document scaled proportionately to the problem and the degree of completion required in the project.
9. To refine student verbal and presentation skills when reporting to a client committee or addressing a group representing facility users

**Overview of RAM Center Project**

The project is redesigning Michigan park buildings located in Ralph A. MacMullan Conference Center in Roscommon, MI. Lecture topics focus on team programming overview, methodology, project management, time management, code analysis, and space planning and schematic designs. Using a team approach, studio activities focus on formation of design teams, design team philosophy and identity, design project identification, overview of interior design programming, and practices of interior design programming which includes literature search, site visit and analysis, climate analysis, code analysis, market analysis, and schematics. This phase will conclude with presentations of the entire programming contents for this project.



Figure 1. Design Process

**Conservation Education Building Basement: Space design suggestions:** From interior space analysis to space planning

**Lodging Facilities:** Redesign Lake Michigan, Lake Huron, and Lake Erie: From interior space analysis to space planning (by midterm): Schematic Development (10/16-10/31)

**CCC Museum Ramp Accessibility Assessment**

- This building ramp (right) is ADA compliant.
- ADA Standards for Accessible Design 2010: the maximum slope allowable for a ramp is a ratio of 1:12 (0.833).
- The slope of the current ramp runs are well below this ratio, making it accessible to wheelchair and ambulatory users.



Figure 2-3. CCC Museum Buildings



This building ramp (left) is **not** ADA compliant.

- The run of the current ramp has a slope of 0.117, which means that it has surpassed the maximum allowable slope for accessible ramps.
- The current run of the ramp is 16' 6". ( Ramp must be a minimum of 23' 3" to meet ADA compliant).

## Interior Design Programming Projects

Team Name	Target Building (In addition to the Basement)	Team Members
TreeCycle	Lake Michigan	Kate Durksen, Sam Kosek, America Ricahrds, Kristin Rozanski
Evolved Innovations	Lake Erie	Mandee Devera, Bridget Patzer, Becky Schmid
Eco-Innovation	Lake Huron	Margie Barkwell, Tasha Narowski, Lisa Polaczek, Christina Pollack
Uprooted Design	Lake Erie	Briana Cornell, Meagan Germaine, Danielle Holman, Rachel Morgan
PAVE Design	Lake Huron	Anna Breithaupt, Olivia Kobayashi, Shaina McNeil

## Design Suggestions

### 1) Conservation Education Building Basement



### 2) Lodging Facilities

#### Lake Michigan (TREECYCLE)



#### Lake Huron (Eco Innovation)



#### Lake Erie (Uprooted Design)



#### Lake Huron (PAVE)



#### Lake Erie (Evolved Innovations)





## **Landscape Architecture 332:** **Design Implementation**

Instructor, Vanessa V. Warren, RLA

### Course Description and Objectives:

This course is the third course in a series of three required concerning landscape engineering and construction; it is 4 credits. This course will address advanced applications concerning construction drawings and environmental systems. The major objectives in this course are:

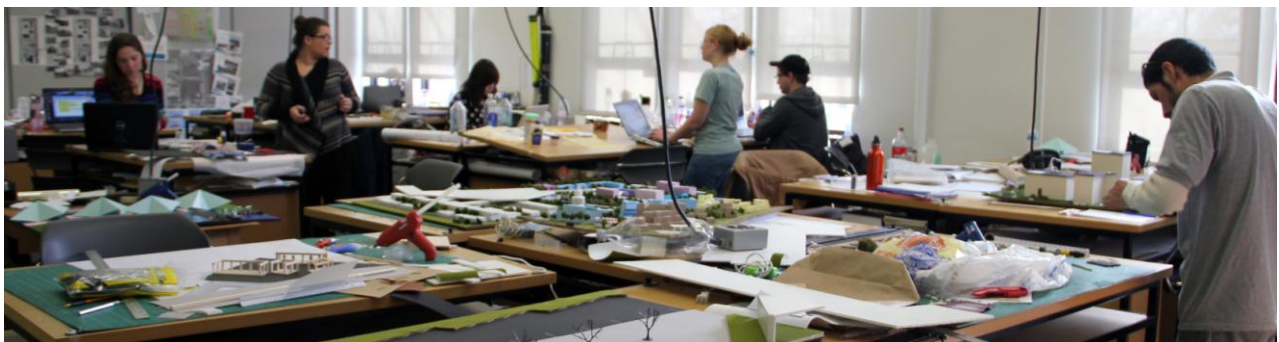
- Develop proficiency in the organization and presentation of construction drawings and their relationship to construction specifications;
- Develop a greater sensitivity in writing professional construction specifications;
- Improve design decision making skills at the construction detail level;
- Acquire knowledge on ADA accessibility;
- Acquire knowledge on trail placement and construction;
- Acquire knowledge and skill in site irrigation implementation;
- Acquire knowledge and skill in fountain and rain garden implementation;
- Further develop knowledge on the drainage process and implications of advance grading applications;
- Expand writing communication skills.

This course is structured around segments. For each segment there will be a major or minor assignment. The assignments address the need for the student to acquire basic skill in performing calculations and the fundamental processes in a particular aspect of implementation. In addition to the assignments, there will be one larger project that will be worked on throughout the semester for a defined and real client that will allow for the integration of construction materials, design details, and construction processes.

### Project Description:

The students of LA 332 were required to prepare a set of plans and specifications for a non-motorized trail in the existing Petoskey State Park in Petoskey, Michigan. The process entailed:

1. Listening to the client;
2. Site visit;
3. Preparing a proposed trail alignment using knowledge gained in LA 332 and LA 231 on:
  - a. Trail aesthetics
  - b. ADA
  - c. Drainage
  - d. Client's needs
  - e. Site conditions
4. Prepare a concept;
5. Prepare a set of construction plans including:
  - a. Trail placement
  - b. Amenity identification and placement





- c. Grading
  - d. Horizontal curve alignment
  - e. Stationing
  - f. Construction detail
6. Prepare a set of specifications for the trail construction

Class site visit and camping trip.



Project Intentions:

This project allowed for the integration of construction materials, design details, and construction processes including:

- o Developing proficiency in the organization and presentation of construction drawings and their relationship to construction specifications;
- o Developing a greater sensitivity in writing professional construction specifications;
- o Improving design decision making skills at the construction detail level;
- o Implementing the acquired knowledge of ADA accessibility;
- o Implementing the acquired knowledge on trail placement and construction.

Class working in studio.



## Landscape Architecture 344: Connections of Scale Studio

Senior Specialist, Paul Nieratko, M.URP

LA 344 is the 5<sup>th</sup> Design Studio in the 8 Design Studio core sequence required in the Bachelor of Landscape Architecture (BLA) and Joint BLA/Master of Environmental Design degree programs.

Course Description: Landscape Architectural human and environmental connections from site to master planning scales with varying complexity. Development of design solutions for medium scale site development projects and master plans focusing on moderately complex design programs, opportunities and problems.

Course Goals and Objectives: This course is intended to provide students with challenges of developing design solutions for medium and varying scale sites of urban, suburban, exurban, or rural character. Landscape master planning principles and practices, the relationships of site plans to master plans, the coordination of multiple land uses, and context sensitive design are subjects imbued in lectures and projects. Regional environmental, social and cultural contexts serve as the basis for undertaking designs.

The course is based on a philosophy that the basic principles of design, creative processes, careful inventory and analysis and, finally, design development processes, can be used to create meaningful, artistic and functional site plans, master plans, parks and mixed use developments for human use and enjoyment. The course explores the evaluation of existing sites within their ecological and community context. Process investigates the expression of living, recreation, circulation and “celebration” with site specific and non-site specific design action and appropriate connections between them. The course reinforces student understanding of the application of principles of design in site development problems and presentation and, attempts to help the

student gain exposure to working for multiple clients who have relatively similar expectations of design outcomes.

This course applies the design, engineering and site evaluation skills of LA 342 - Site Design II; LA 331 - Site Engineering; and HRT 311 - Planting Design, in 10 to 500 acre site design and master planning problems which typically have community wide environmental, historical and artistic impacts. Community planning processes, zoning applications, housing types and forms, built infrastructure, site open spaces, active and passive parks, recreational housing, and verbal/oral, graphic and written communications are just some of the components in lectures and of studios and design assignment outcomes.

Through site visits, client meetings, photography, sketching, drawing, plan making, elevations, sections, model building, video image capture, GIS, AutoCad ( Map Factory, Arch. View), and Adobe CS (Photoshop, InDesign) LA 344 attempts to expand the students design capabilities into the master plan arena and begin the design development process necessary toward successful functioning as an entry level Landscape Architecture professional.

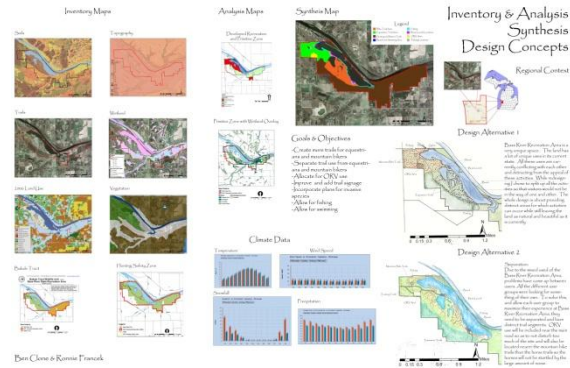




Bass River State Recreation Area Design Visioning Project: The Bass River Recreation Area presented a larger scale design site than is typical for the LA 344 course. The site provided an exceptional opportunity to interact with multiple clients including the State of Michigan DNR, Ottawa County Parks Department, and current Bass River Recreation Area user groups, including Equestrians, Mountain Bikers, Hikers, and Duck Hunters. The site also provided the opportunity to evaluate environmental contexts from the most broad scale (the glacial and fluvial processes that formed the Great Lakes drainage basin, the great lakes themselves and the formation of the river drainage basins of the state of Michigan) down in scale to more typical

products. Zip lines, Grand River Water Trail campgrounds and Grand River Greenway trail systems on both properties, swimming beach improvements, separation of equestrian, mountain bike and hiking trails, and improved boat launch access are among the ideas offered.

**Example Student Site Inventory and Analysis**



Students at the north end of Max Lake

**Example Student Master Plan Model**



site specific elements (soils, topography, vegetation and drainage patterns). Former mining uses also provided opportunity for overview of mined land reclamation practice in the course lectures. Evaluation of the site from a regional planning scale was key in student design decisions, conditioned by the water oriented recreational opportunities offered by the Grand River, Max Lake, Buddies Pond, Lost Lake, Bass River and high quality wetlands. The contiguous Ottawa County Riverside Park offers opportunities to share in management and maintenance of proposed design activities in student

**Example Student Design Details Sheet**





Ralph A. MacMullan (RAM) Conference Center Campus Site Plan Project: The RAM Center project, (North Higgins Lake, Roscommon, Michigan) provided a unique opportunity to work on a project with important cultural, historical and natural features. Students created an updated Master Plan and Campus Site Plan Details for the Center. Founded in 1938 and built between 1939 and 1941, the “RAM Center” was constructed by the historic Civilian Conservation Corps (CCC) as a training facility and conference center of the DNR. The RAM Center now also “caters to 501-c3 non-profit organizations and groups with an environmental or natural resources focus”. In a broad sense, the RAM Center’s mission is to provide a place for **“conservation education” to groups of people concerned with the natural environment and natural (cultural and historic/heritage) resources of the state of Michigan**”. The project aligned with other class projects in Interior Design and Construction Management, and the

Marketing and Tourism class from the department of Community, Agriculture, Recreation, and Resource Studies (CARRS). The LA 344 master plans provided the groundwork for PDC 991.



Sample Student Master Plan and Detail Boards









**PRR 474: The Tourism System**  
Parks, Recreation and Tourism  
Resources/Natural Resource-Based  
Recreation and Tourism (PRT/NRT)  
Assoc. Prof: Sarah Nicholls, PhD

Course Description: PRR 474 is the capstone course for students in the Parks, Recreation and Tourism Resources/Natural Resource-Based Recreation and Tourism (PRT/NRT) majors. As such, it is designed to integrate the multiple strands of learning in which PRT/NRT students have engaged in their previous classes at MSU. As a part of the new and experimental collaboration with the Michigan Department of Natural Resources, as well as Sarah's connections with Travel Michigan and various regional Convention and Visitors Bureaus, the 2012 class devoted the majority of their time and effort to the development of a series of field-based projects in and around the Bass River Recreation Area in Ottawa County, west Michigan. In addition, we were also keen to tie the class and these projects to the Michigan Tourism Strategic Plan that Sarah is currently developing for Travel Michigan and the Michigan Travel Commission.



Course Goals and Objectives: The primary issue on which the two groups decided to focus was the feasibility of developing some kind of outdoor recreation vehicle (ORV) training or test facility at the site. The first group focused on gathering secondary data regarding similar sites around the country and on assessing current Michigan-based ORV users' opinions about the need for such a site.




The second group concentrated on existing users of Bass River – in particular mountain bikers and equestrians – and on their desires for future development of the area and thoughts about a possible ORV-related facility. Close to 750 ORV users and nearly 200 Bass River users (predominantly mountain bikers) participated in a pair of online surveys administered during the month of November. The students will present detailed analyses of these responses and make recommendations regarding the future development of Bass River based on their findings.

**Michigan Off Road Vehicle (ORV) Survey**

Welcome to the MSU/DNR ORV survey! Please be sure to click the >> button at the bottom of each page to record your responses and move on to the next page. Thank you for participating!

The purpose of this research survey is to better understand your use and ownership of an Off Road Vehicle (ORV). Your responses are vital to the success of this study, but your participation in it is completely voluntary. You give your consent to participate in the study by completing the survey. Your privacy will be protected to the maximum extent allowable by law and your responses will only be reported in combination with those of other respondents. If you have any questions about this survey, please contact Dr. Sarah Nicholls (nichol10@msu.edu, (517) 432-0319). If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of the study, you may contact, anonymously, if you wish, the Human Research Protection Program (by phone: (517) 368-2180; fax: (517) 432-6629; e-mail: hrp@msu.edu, or mail: 302 Olds Hall, East Lansing, MI 48824).



The DNR is considering the development of an ORV Training Center in the state, a place where riders of all ages could come to learn to ride an ORV in a safe and controlled environment. Such a center would most likely be based on a partnership with one or more ORV manufacturers and could include the opportunity to test drive various vehicles. The center would require a fee (amount to be determined) to utilize.

Have you ever visited an ORV training center?

Yes  
 No

Would you be interested in visiting an ORV training center?

Yes  
 No

Do you believe there is a need for an ORV training center in Michigan? Please use a 5-point scale where 1 indicates that you strongly disagree about the need for such a center, and 5 indicates that you strongly agree.

	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	Don't know
Please choose one	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If such a center were established, what would be the best location for it?

Southeast Lower Peninsula  
 Southwest Lower Peninsula  
 Northwest Lower Peninsula  
 Northeast Lower Peninsula  
 Eastern Upper Peninsula  
 Western Upper Peninsula  
 Don't know

What comments do you have regarding the possible development of an ORV training center in Michigan?

Quitting >>