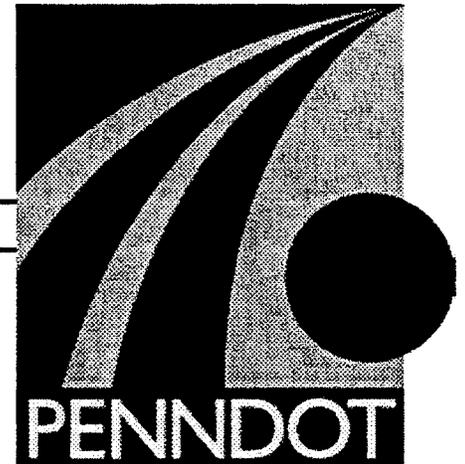




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**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF TRANSPORTATION**

**PENNDOT RESEARCH**



**I-99 INFORMATION EXCHANGE**

**University-Based Research, Education,  
and Technology Transfer Program**

**AGREEMENT NO. 359704, WORK ORDER 90**

**FINAL REPORT**

**May 2002**

**By: P. Jovanis, J. George, and S. Park**

**PENNSSTATE**



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**Pennsylvania Transportation Institute**

**The Pennsylvania State University  
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2. The second part of the document is a list of dates.

3. The third part of the document is a list of locations.

4. The fourth part of the document is a list of events.

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6. The sixth part of the document is a list of organizations.

7. The seventh part of the document is a list of activities.

8. The eighth part of the document is a list of results.

9. The ninth part of the document is a list of conclusions.

10. The tenth part of the document is a list of recommendations.

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I-99 INFORMATION EXCHANGE  
University-Based Research, Education, and Technology Transfer  
Agreement No. 359704  
Work Order 90

FINAL REPORT

Prepared for

Commonwealth of Pennsylvania  
Department of Transportation

By

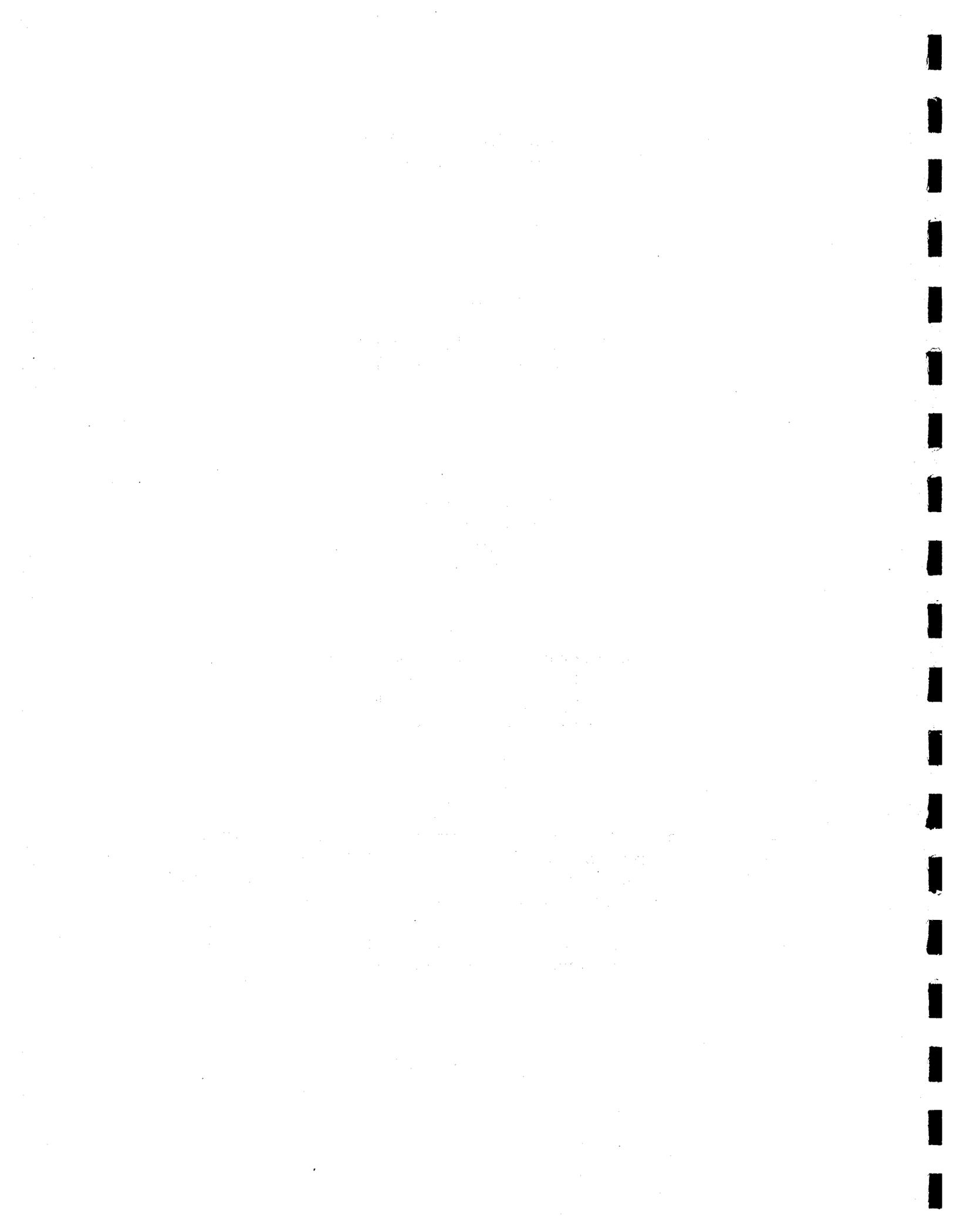
Dr. Paul P. Jovanis,  
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May 2, 2002

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PTI 2002-31



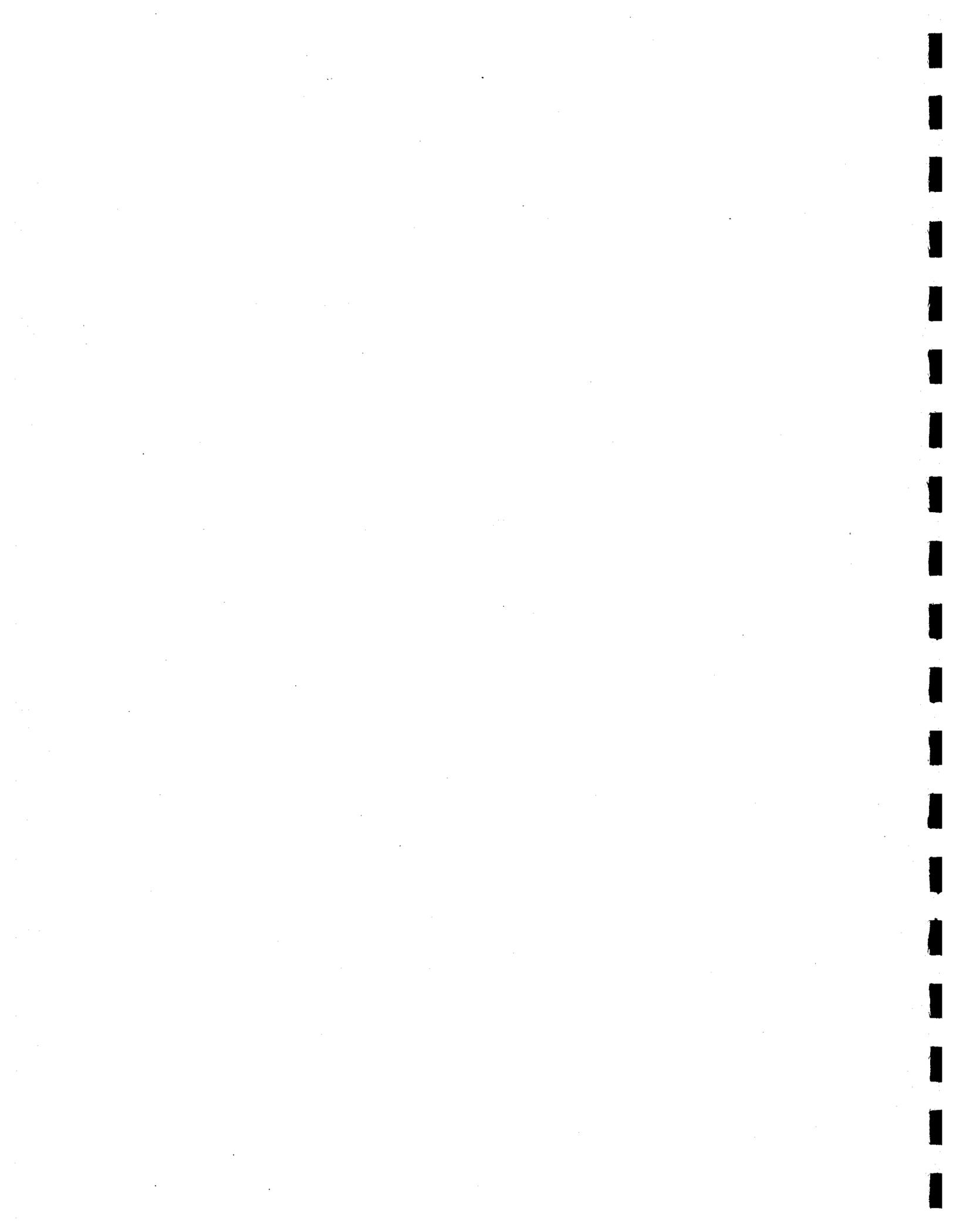
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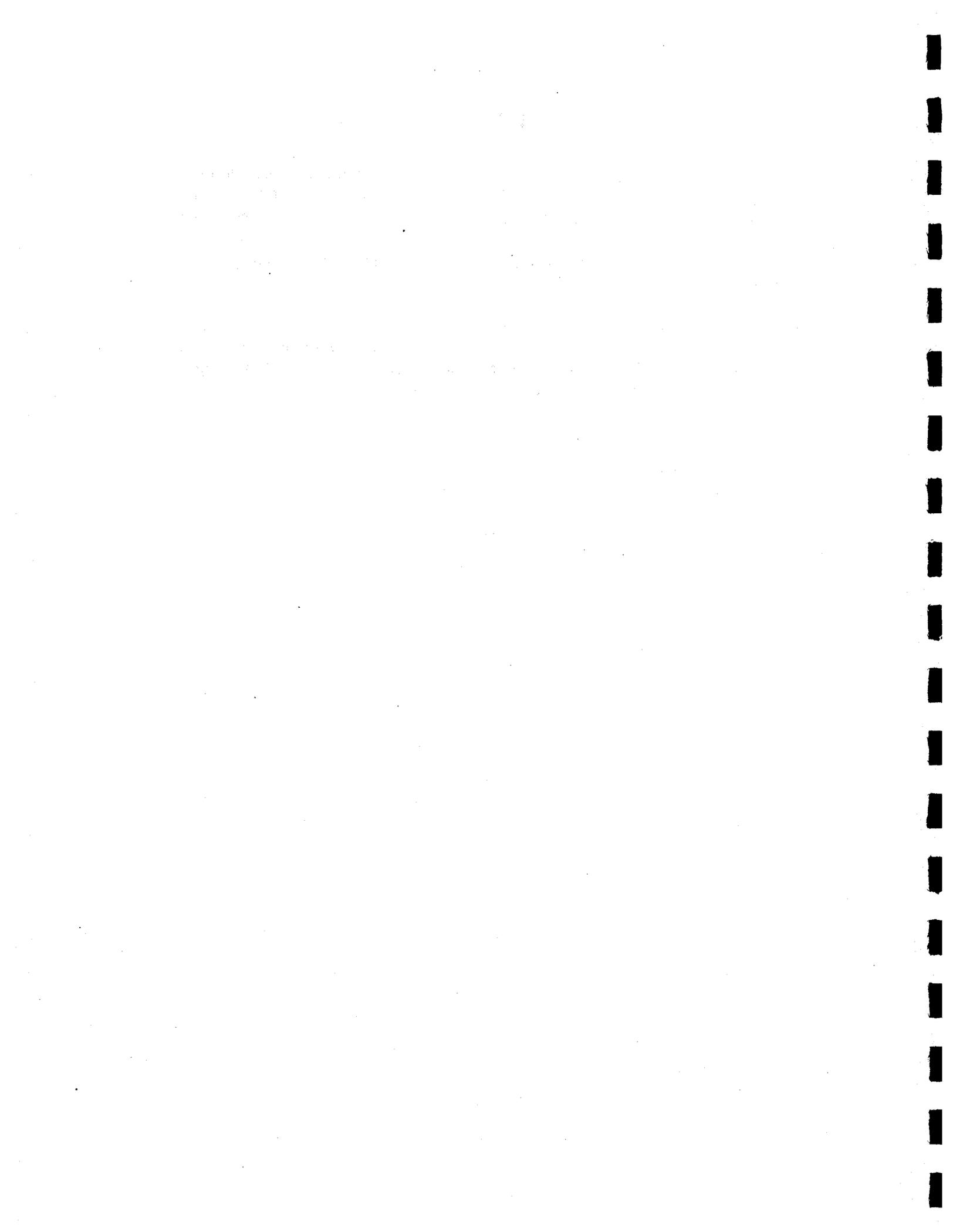
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## EXECUTIVE SUMMARY

The stated goal of this project was to produce an electronic mechanism for information exchange on the set of projects comprising the I-99 Advanced Transportation Technology Test Bed. A set of meetings with stakeholders led to the development of a set of user needs. These needs were used to define a Web-based site, driven by linked databases, which captured the information requested by users. The site was implemented on a server at the Pennsylvania Transportation Institute (PTI).

The Web site contains background information, such as statements of work for each I-99 research project, along with up-to-date lists of project products, monthly reports, and other project deliverables. The Web site answers the question: "What is happening on the I-99 Transportation Test Bed Project?"



# **I. OVERVIEW**

## **A. BACKGROUND**

The Pennsylvania Department of Transportation (PENNDOT) has engaged Penn State researchers in a series of research projects associated with the construction of the I-99 highway in the Centre County region. The projects, as a group, have substantial visibility and represent a significant financial investment by PENNDOT. As a result, a need was recognized for an enhanced level of information exchange between PENNDOT and the Penn State research teams. There was also recognition that the research was likely to attract national attention, so it was in the interest of all parties to facilitate dissemination of findings to a broad professional and lay audience.

As a result of these considerations, PENNDOT initiated with Penn State the University-Based Research, Education, and Technology Transfer Center Work Order 90, I-99 Information Exchange.

## **B. STATEMENT OF THE PROBLEM**

The objective of Work Order 90: I-99 Information Exchange is to provide an answer to a simple question: "What's happening on I-99?" The success of I-99 information dissemination critically depends on understanding the expectations of the participating stakeholders. In particular, to understand the information needs of the stakeholders in order to structure a system that provides a substantive answer to the questions posed above.

## **C. APPROACH**

The recommended approach begins with a user needs assessment for information dissemination derived from direct meetings with PENNDOT and the Penn State research team. These include PENNDOT central office (office of research and technical bureaus), District 2-0, and the Penn State research team on the associated research projects. A series of structured meetings were held to allow stakeholders to articulate their needs. The meeting dates and attendees are summarized in table 1.

The research team has synthesized the information obtained during the meetings in section II of this document, which describes the content and scope of the communications and outreach elements undertaken to address user needs. The needs are prioritized and have been implemented in the developed Web site. The Web site is documented in section III and appendix A and B.

<b>Name</b>	<b>Affiliation</b>	<b>Date of meeting</b>
Jim Ritzman	PENNDOT	May 24, 2001
George Khoury	PENNDOT	June 11, 2001
Bert Kisner	PENNDOT	June 11, 2001
Kevin Kline	PENNDOT	June 11, 2001
Jim Miller	PENNDOT	June 11, 2001
Jim Ritzman	PENNDOT	June 11, 2001
Andrea Schokker	Penn State	July 16, 2001
Dennis Hiltunen	Penn State	July 16, 2001
Peggy Johnson	Penn State	July 16, 2001
Tom TenEyck	PENNDOT	July 17, 2001
Bill Pogash	PENNDOT	July 17, 2001
Barry Newman	PENNDOT	July 17, 2001
Brian Spangler	PENNDOT	July 17, 2001
Brian Thompson	PENNDOT	July 17, 2001

Table 1. List of Meeting Attendees: User Needs.

## **II. USER NEEDS: IMPLICATIONS FOR SYSTEM DESIGN**

### **A. FINDINGS OF GROUP MEETINGS**

In order to assess user needs in a systematic and comprehensive way, an outline was prepared to guide discussions during meetings with stakeholders. Table 2 summarizes the outline used for the meetings. While the discussions varied with each group, the outline facilitated consistent discussions and assured that each stakeholder group had the opportunity to provide advice and guidance concerning important aspects of the information exchange. The project team did not attempt to steer the discussion, but sought to have open discussions to identify issues of importance to users.

Stakeholders were quite candid in their expressions of interest. Several PENNDOT stakeholders wanted to develop a system that would enhance and support their capability to track the Test Bed project status. Many saw this project as an opportunity to educate the public and other professionals about I-99 activities. It was also clear that PENNDOT did not want the Information Exchange activity to replace existing reporting and financial accounting mechanisms (which were generally perceived as quite effective). Rather, PENNDOT was seeking added value in both content and integration of information that would provide easier use and facilitated responsiveness to inquiry. There was also a need expressed for the system to include internal features to help gauge its effectiveness in information dissemination.

Consistent with the outline in table 2, user needs are summarized in areas of searchability, content, access, and security.

#### **Searchability:**

- A search capability should be incorporated as an important feature of the system.
- Resources available on the system are to be associated with keywords and accessible from an index.

#### **Content:**

- Visual aids such as Gant charts can be incorporated to illustrate project completion stages.
- The system should promote and provide links to research activity and resources on the existing PENNDOT Web site as well as other Web sites.
- Information concerning how to contact Test Bed researchers should be available on the system. It may also be useful to include reference to background information. Where possible, research manuscripts and presentations will be posted on the system. If copyright provisions restrict the ability to display information, then hotlinks will be provided to other appropriate Web sites.

- **VISITS WITH STAKEHOLDERS**
  - PENNDOT
  - Principal Investigators
  - Others
  
- **WHAT INFORMATION NEEDS TO BE ACCESSED**
  - Searchability: How will we set up the database?
    - By Author
    - By Keywords
    - By Title

} Needs to be addressed as output of user needs.
  
- **CONTENT OF THE SITE**
  - Monthly reports
  - Power point and other presentation materials from conferences and briefings by faculty
  - Interim Reports
  
- **ACCESS TO SITE TO INCLUDE**
  - Open public access
  - PENNDOT
  - FHWA
  - Principal Investigators
  
- **LEVEL OF SECURITY**
  
- **LINKS TO OTHER PROJECTS.**

Table 2. Outline for Meetings with PENNDOT and Penn State Principal Investigators.

Content (continued):

- Monthly Progress reports of the I-99 Test Bed projects are to be stored and indexed to enable an efficient review of research activity in each project, including information about planned work for the next month.
- Descriptive information for each of the six projects should be included as static information to familiarize first-time system users with the scope of the Test Bed activities.
- Help menus should be made available on the system.

Access:

- Emphasis should be on developing a user-friendly interface while securing information that is not available for public access.
- PENNDOT believes in an open access policy for reports and other documentation that has been reviewed (i.e. is not in draft form).
- Each project team should enter monthly progress reports in a format that is directly accessible by the system, including activities for the current month and the subsequent month.
- A paper copy of the monthly progress report has to be generated for subsequent transmittal to PENNDOT.
- Presentation materials from conferences and briefings should be uploaded to the system.
- Hyperlinks may be provided to information already accessible at existing Web sites without being duplicated for this site.

Security:

- Information pertaining to percentage time elapsed should be updated through monthly report content and added to other report information in a series of integrated Gant charts and tables. Reporting of specific dollar amounts and other financial information will not be available on the system, but will continue to be reported through the PTI State program monthly reporting process.
- Downloadable documents should be in Adobe PDF format so that they do not lend themselves to being easily tampered.

## **B. IMPLICATIONS FOR SYSTEM DESIGN**

The users needs articulated during the meetings of 2001 have been met by developing an on-line information system that is Web-based and supported by an integrated database. The system is accessible through a Web browser and seamless to the user is supported by a database of information that is regularly updated by project and PTI staff. The system features reliable, accurate, and secure information concerning the status of each of the I-99 Test Bed research projects. The system has been designed to be scalable to accommodate additional projects should they be funded.

The information exchange system is intended to provide particular benefits to PENNDOT including:

- Integration of existing and future information about I-99 Test Bed research projects to enhance project management.
- Integrating access to external sites and retrieving information that is presently fragmented and available across multiple systems.
- Development of charts and tables that present integrated information in convenient, easily comprehensible formats including graphs, charts or tables. These formats will be particularly developed to support enhanced project management.
- Easy access to technical presentations and publications that evolve from the Test Bed research for use by PENNDOT project and program managers.
- Availability of all I-99 Test Bed project monthly progress reports from a single electronic source that is designed for easy access and use.

## **C. IMPLEMENTATION – INFORMATION SYSTEM SPECIFICATIONS**

Table 3 summarizes the information needs that will drive the design and implementation of the Web-based system. One of the most strongly stated needs was to provide accurate and timely information with frequent (at least monthly) updates. A database driven Web site has been implemented for this purpose. The major components of the Web site are the static Web pages, dynamic Web pages, and the database. The database is designed and developed for storage and retrieval of the information. The user interfaces for access to the information in the database are the dynamic Web pages on the Web site. The Web site is hosted on a Web server located on PTI's computer network. The connection to host the site is provided by Penn State University.

## **CONTENT OF THE SYSTEM**

- Descriptive information concerning the six I-99 Test Bed projects, tasks, and projection of completion times.
- Visual aids and graphical elements like Gant charts to describe project timelines and support project management.
- Monthly progress reports.
- Research materials and presentation materials from conferences and briefings by faculty.
- Categorized links to public information available at other Web sites.

## **ACCESS LEVELS OF USERS OF THE WEB-BASED INFORMATION SYSTEM**

- General public will have access to the descriptive information that has educational value.
- PENNDOT managers will have full access to monthly project progress reports and all additional site information.
- Researcher team members will have access to project monthly reports and portions of the site that they can update with necessary links to research and presentation materials.
- Access to information is to be defined based upon group membership. Categories of membership will initially include: PENNDOT managers; Penn State I-99 Test Bed researchers, and the general public (including researchers and engineers from other locations).
- No financial information relating to project component costs is going to be made available on the system.

## **LINKS TO OTHER SITES AND PROJECTS**

- PENNDOT Web site
- I-99 construction
- Corridor O
- FHWA
- Pennsylvania Transportation Institute (PTI)
- PSU Civil and Environmental Engineering
- Links to other relevant sites will be developed during design of the system.

Table 3. System Specifications.

## **D. SUMMARY**

This section summarizes the findings of a user needs assessment, conducted as the first task on Work Order 90: I-99 Information Exchange. Users were identified and meetings were arranged with representative members of each group to provide a forum to articulate needs. The design and maintenance elements of the information system were defined, with particular attention paid to elements of searchability, content, access, security, and links to other sites. The system is designed to provide high quality, reliable, accurate information on the status and progress of the following PENNDOT projects with Penn State:

- Sedimentation and Erosion Control (Work Order 77)
- Curved and Skewed Bridges (Work Order 79)
- Predict Movement and Stresses in Integral Abutments (Work Order 80)
- High Performance Concrete: Long Term Durability of Bridges (Work Order 81)
- Geotechnical Site Investigation for Bridges (Work Order 82)
- Information Exchange (Work Order 90)

### **III. INFORMATION EXCHANGE SYSTEM IMPLEMENTATION**

#### **A. OVERVIEW**

Task 2 of Work Order 90 involves the development of the actual information exchange system; Task 3 is the implementation, documentation, and enhancement processes. This section describes the system developed to meet the needs of the stakeholder community. The system was demonstrated to stakeholders and revised in response to feedback with respect to the user interfaces, organization of content, and effectiveness of the site. Suggestions and recommendations for improving the system were incorporated into the final design. The system is now online and available to all the participating stakeholders and the general public.

Table 4 replicates the system specifications, summarized in table 3, that were developed during the user needs assessment (George and Jovanis, 2001). In *Italics* next to each requirement is the page or function of the Web site that satisfies the requirement. A quick review of the table indicates that all requirements have been satisfied.

#### **B. SITE DOCUMENTATION**

This section presents the information system workflow and user interface, UI. It consists of screen shots of the Web pages along with brief comments about the Web pages and database screens.

The IE system supports four different users – general public, project managers, principal investigators, and system administrators. Each role will have access to a specific workflow with corresponding UI requirements and functions. The document sections address:

1. General public
2. Project managers at PENNDOT
3. Principal investigators at PSU
4. System administrators at PSU/PTI

#### **C. INFORMATION EXCHANGE USER SCREENS**

Access to the Information Exchange System is through one of two websites. The general public Web site is at:

<http://i99testbed.pti.psu.edu>.

The restricted access Web site is at:

<http://i99testbedprojects.pti.psu.edu>.

## CONTENT OF THE SYSTEM

- Descriptive information concerning the six I-99 Test Bed projects, tasks, and projection of completion times. *Information is available on each of the six project Web pages.*
- Visual aids and graphical elements like Gant charts to describe project timelines and support project management. *Implemented as part of the project Web pages for each of the six work orders*
- Monthly progress reports. *Available for six work orders for PENNDOT and PI's only.*
- Research materials and presentation materials from conferences and briefings by faculty. *Available on six work order Web sites.*
- Categorized links to public information available at other Web sites. *Links provided on various locations within the overall Web site, depending on relevance.*

## ACCESS LEVELS OF USERS OF THE WEB-BASED INFORMATION SYSTEM

- General public will have access to descriptive information that has educational value. *Has been made available to public through web site at address: <http://i99testbed.pti.psu.edu>.*
- PENNDOT managers will have full access to monthly project progress reports and all additional site information. *This requirement has been met by storing all project documents on the PENNDOT version of the Web sit: <http://i99testbedprojects.pti.psu.edu>.*
- Research team members will have access to project monthly reports and portions of the site that they can update with necessary links to research and presentation materials. *Available through <http://i99testbedprojects.pti.psu.edu>.*
- Access to information is to be defined based upon group membership. Categories of membership will initially include: PENNDOT managers, Penn State I-99 Test Bed researchers, and the general public (including researchers and engineers from other locations). *Implemented as described in the three bulleted items above.*
- No financial information relating to project component costs is going to be made available on the system. *Implemented.*

## LINKS TO OTHER SITES AND PROJECTS

- PENNDOT Web site
  - I-99 construction
  - Corridor O
  - FHWA
  - Pennsylvania Transportation Institute (PTI)
  - PSU Civil and Environmental Engineering
  - Links to other relevant sites will be developed during design of the system
- References to these sites occur through the individual work order pages as needed or through the main Web page for general site references.*

Table 4. Web Site: System Specification Attainment.

**PUBLIC SITE.** Following are samples of typical pages within the public site system (all are included in restricted site also). They describe, in pictures and words, the activities underway on the Test Bed.

The Home Page contains an introduction to the Web site and listings of the Test Bed projects. The listings are linked to the respective work order main pages.

http://i99testbed.pti.psu.edu



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

[I-99 Test Bed Home](#) | [About us](#) | [Testbed Projects](#) | [Contact](#) | [Related Links](#) | [Feedback](#)



Welcome to the I-99 Advanced Transportation Technology Test Bed Website. The Test Bed seeks to instrument sections of the I-99 highway with advanced sensors and electronics to test specific hypotheses about highway construction, materials, structural analysis and environmental impact. The Test Bed has evolved from a unique partnership between PENNDOT and Penn State faculty.

The site supports the Test Bed Information dissemination by providing the current status of each project along with information concerning reports, research publications and meeting presentations

The projects currently underway include:

- [Evaluation of Approved Erosion and Sediment Controls to Determine Best Management Practice](#)
- [Prediction of Movement and Stresses in Curved and Skewed Bridges - Phase I](#)
- [Methodology to Predict Movement and Stresses in Integral Abutments](#)
- [High Performance Concrete Initiative - Long Term Durability of Bridge Decks Phase I](#)
- [Geotechnical Site Investigation for Bridge Foundations](#)
- [Information Exchange](#)

The Project [Map](#) shows the location of bridges and highway sections to be instrumented as part of this research.

The Pennsylvania Transportation Institute ©2001  
Comments and questions may be directed to [webmaster@pti.psu.edu](mailto:webmaster@pti.psu.edu)

**ABOUT US.** There is a page that provides an overview of the rationale for the Test Bed and the steps taken in the development and evolution of the projects. This page provides background information concerning how the six particular work orders evolved.

<http://i99testbed.pti.psu.edu/about.html>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

[I-99 Test Bed Home](#) | [About us](#) | [Testbed Projects](#) | [Contact](#) | [Related Links](#) | [Feedback](#)

### About Us

A series of meetings, conducted in fall 1998, led to a common understanding that many of the technical challenges facing the design and construction team for I-99 could be addressed by advanced technology applications. Further, there was a belief that the issues identified and the solutions proposed would be relevant to the Commonwealth as a whole. In the context of this broad cooperation and partnership, a planning effort was undertaken, culminating in the funding and initiation of research projects concerned with bridge and highway infrastructure and environmental impact and mitigation.

The concept of the Test Bed is unique in many ways:

1. It seeks to implement continuous long-term testing on a broad scale on an operational interstate facility;
2. Successful implementation requires close cooperation between the University and the PENNDOT local district;
3. Successful planning should recognize and be responsive to private sector concerns and issues;
4. The Test Bed would have to be responsive to problems throughout the Commonwealth, not just in the I-99 region.

#### **Our Goal:**

Collect and share information on research test bed projects  
Regularly obtain feedback from stakeholders on the quality and usefulness of the information;  
Utilize customer feedback to improve the design and layout of the information.

For summaries of the Testbed Projects, click [here](#)

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Comments and questions may be directed to [webmaster@pti.psu.edu](mailto:webmaster@pti.psu.edu)

**TEST BED PROJECTS.** A brief history of the Information Exchange system is presented. This page lists the six Test Bed projects and provides summaries of their technical content. Only a portion of the page is displayed here for illustrative purposes. Hot links are available to more detailed project descriptions.

s  <http://99testbed.pti.psu.edu/Testbedprojects.html>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### I-99 Testbed Projects

Work Order No.	Project Title and Description
77	<p><u><a href="#">Evaluation of Approved Erosion and Sediment Controls to Determine Best Management Practices</a></u></p> <p>PTI will develop evaluation and measurement procedures to effectively assess best management practices (BMP) that are planned in conjunction with Interstate 99 construction and identify erosion and sediment control measures that are appropriate for use in a public highway environment. PENNDOT is reviewing BMPs currently recommended by the Pennsylvania Department of Environmental Protection. The intent of the review is to incorporate those practices into PENNDOT policies. The review is being done in conjunction with the National Resources Conservation Services and the various conservancy districts throughout Pennsylvania. The research conducted under this work order will complement the efforts of PENNDOT's review.</p>
79	<p><u><a href="#">Prediction of Movement and Stresses in Curved and Skewed Structures</a></u></p> <p>In this project, three curved and skewed bridges in the Interstate 99 corridor will be instrumented and monitored. Phase I of this project will involve developing a work plan, developing a preliminary finite element model to help with instrumentation planning for the superstructure, collecting data and documentation during construction, and conducting a single controlled field test. Findings and recommendations will be presented, as appropriate, to PENNDOT, AASHTO, and TRB.</p>
80	<p><u><a href="#">Methodology to Predict Movement and Stresses in Integral Abutment Bridges</a></u></p> <p>The purpose of this study is to examine, through field measurements, the performance of a number of integral abutment bridges in the Interstate 99 corridor over a significant period of time to establish a credible, verified design procedures for this bridge construction type. Using the results of this study, the research team will develop recommendations for determining critical design parameters and will recommend a design philosophy suitable for incorporation into PENNDOT bridge design specifications. Findings and recommendations will be presented, as</p>

**PROJECT PAGE.** This is an example of a project page; this is the page that is hot linked to the previous project summary page. The example, in this case, is taken from WO 90, the Information Exchange Project. This main page has a summary of the project with links to Original Work Order Scope document, Related Publications and Links, and Monthly Progress Reports (for restricted site only).

ss  <http://i99testbed.pti.psu.edu/WO90.html>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### I-99 Information Exchange

Work Order 90

I-99 Information Exchange

Through this project, information regarding I-99 Test Bed projects being conducted by Penn State will be disseminated to PENNDOT, the Federal Highway Administration (FHWA) and other stakeholders. Electronic media will be used to provide up-to-date project information such as presentation materials from both regional and national events, notes from meetings with stakeholders, and monthly progress reports.

[Work Order Scope](#)

[Related Publications and Links](#)

For more information please contact:

[Dr. Paul Jovanis](#)

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**WORK ORDER SCOPE.** For each work order, this screen contains the scope of work, a graphical representation of the timelines of various tasks, and detailed task descriptions.

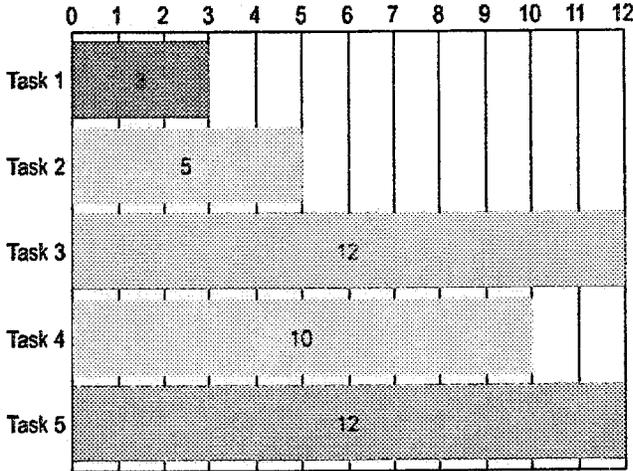
<http://199testbed.pti.psu.edu/Projects/workorderscope90.cfm>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

[I-99 Test Bed Home](#) | [About us](#) | [Testbed Projects](#) | [Related Links](#) | [Feedback](#)

Work Order 90  
[I-99 Information Exchange](#)



Task	Start Month	End Month	Duration (Months)
Task 1	0	3	3
Task 2	0	5	5
Task 3	0	12	12
Task 4	0	10	10
Task 5	0	12	12

Start Date 05/03/01      Schedule of WO 90 (Ending Month)

**STATEMENT OF THE PROBLEM**

The objective of the information exchange work order is to provide an answer to a simple question: "What's happening on I-99?" The recommended approach begins with a user needs assessment for information dissemination derived from direct meetings with the Pennsylvania Department of Transportation (PennDOT) and Federal Highway Administration (FHWA) division officials. The user needs report will describe the scope of the communications effort needed to meet stakeholder demand, priorities for information exchange implementation, and an implementation schedule. Periodic reports are included as task deliverables.

**Task 1 Define User Needs for Information Dissemination**

The success of I-99 information dissemination depends critically on understanding the expectations of the participating stakeholders. These include PennDOT central office (office of research and technical bureaus), District 2, and FHWA. A series of structured meetings will be held to allow stakeholders to articulate their needs. The research team will synthesize this information in a document that describes the content and scope of the communications and outreach elements required to address user needs. These needs will be prioritized and implemented subject to work order budget constraints. Deliverable: User needs report that articulates the scope of the information requirements and sets priorities for implementation.

**RELATED LINKS.** Links to related sites are provided for the convenience of the user. Contact information for submitting additional links is also provided.

 <http://I99testbed.pti.psu.edu/links.html>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### Related Links

Offered on this page is a collection of links to web-based information resources, training resources, and highway design/engineering resources that address the areas of the I-99 test bed projects.

The purpose of this page is to provide a central location for links to common and valued resources for quick reference by participants. The page can ultimately consist of those links that serve as the "standard" for web-based resources on the testbed projects and reference.

Addition or removal of a link is based on the desire and approval of the sponsors. Suggestions for adding information links to the web site can be emailed to: Jacob George at [jx026@psu.edu](mailto:jx026@psu.edu)

#### [PENNDOT](#)

[PENNDOT District 2-0 Major Projects Updates](#)

#### [Corridor Q](#)

#### [FHWA](#)

[Transportation Equity Act for the 21st Century \(TEA-21\)](#)

#### [PTI](#)

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**RELATED PUBLICATIONS.** This page presents principal investigator publications (Power Point and other presentation materials from conferences and briefings by faculty) and related links. Each item is summarized in a few sentences. To satisfy user needs, every downloadable document is in Adobe PDF format.

[http://i99testbed.pti.psu.edu/proj\\_pub90.cfm](http://i99testbed.pti.psu.edu/proj_pub90.cfm)



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### Related Publications and Links Work Order 90 [I-99 Information Exchange](#)

Persentation : I-99 Advanced Transportation Technology Test Bed	Symposium on Weather Information for Surface Transportation <a href="http://i99testbed.pti.psu.edu/publications/WO90/WIST1999.pdf">http://i99testbed.pti.psu.edu/publications/WO90/WIST1999.pdf</a>
Presentation : I-99 Advanced Transportation Technolgy Test Bed	Symposium on Weather Inforamtion for Surface Transportation II Rockville, MD <a href="http://i99testbed.pti.psu.edu/publications/WO90/WIST2000.pdf">http://i99testbed.pti.psu.edu/publications/WO90/WIST2000.pdf</a>
Project Infolink I-99 - overview	The project overview is the U.S. Route 220/ I-99 /S.R. 6220 Project extends from Bald Eagle (I-99) in Blair County to the Mount Nittany Expressway (U.S. 322) in Centre County. And The Pennsylvania Department of Transportation has divided the project area. This web site provides overveiw of each project area. <a href="http://i99.dickinfolink.com/overview.asp">http://i99.dickinfolink.com/overview.asp</a>
Project Infolink I-99 - Project Map	This web site includes each construction map <a href="http://i99.dickinfolink.com/projectmaps.asp">http://i99.dickinfolink.com/projectmaps.asp</a>
Project Infolink99 - Ongoing Projects	This web site provides ongoing projects - Description, Map, Photos, Schedule and Videos. <a href="http://i99.dickinfolink.com/sectionb12.asp">http://i99.dickinfolink.com/sectionb12.asp</a>
Dr. Paul P. Jovanis Home Page	Dr. Paul P. Jovanis Home Page at Penn State University <a href="http://www.enqr.psu.edu/ce/faculty/jovanis.html">http://www.enqr.psu.edu/ce/faculty/jovanis.html</a>

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**CONTACT US.** Contact information is provided for each work order as well as the overall Web site. The information includes e-mail and telephone numbers of both the project principal investigator and related staff.

 <http://199testbed.pti.psu.edu/contact.html>

**I-99 ADVANCED TRANSPORTATION  
TECHNOLOGY TEST BED**

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## Contact Us

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Comments and questions may be directed to [webmaster@pti.psu.edu](mailto:webmaster@pti.psu.edu)

**FEEDBACK FORM.** A customer survey form is provided. The purpose of the survey form is to gauge acceptance of the Web site design and content. The users may choose to submit anonymous responses.

http://i99testbed.pti.psu.edu/feedback.html



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### Feedback form

Please fill out this form and give us your feedback so that we can serve you better.

Name ( Last):

Name (First):

E-mail address:

Do you find the related links useful?:

Do you find the related links for each testbed project useful?:

Are the colors and styles used on this site professional:

Are the Navigation links on this site user friendly:

My feedback best applies to the following area:

My comments (in specific words):

Preview Message:

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**MAP.** An image map that provides geographic locations of the structures is presented. The user will be able to easily navigate to the project associated with the structures.

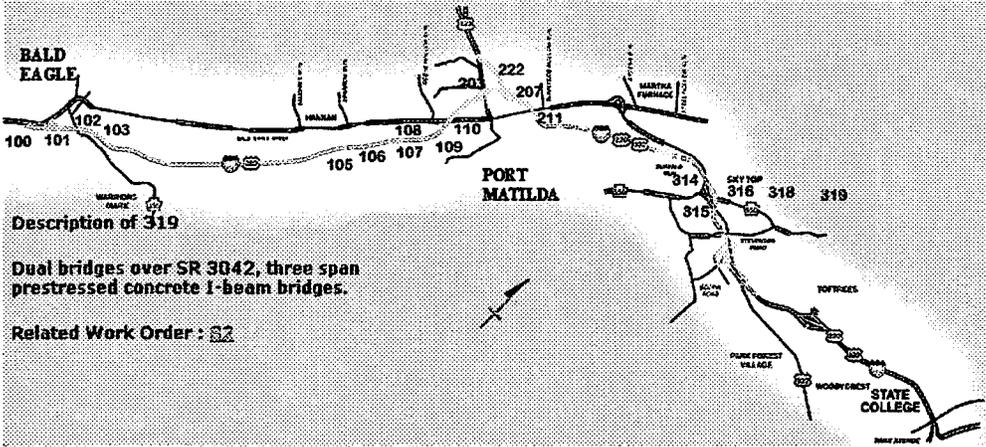


## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### Project Map

This map illustrates the geographic scope of the I - 99 Test Bed, from Bald Eagle to State College, PA. The numbers indicate bridges that will be instrumented for testing on one or more projects.



**Description of 319**

Dual bridges over SR 3042, three span prestressed concrete I-beam bridges.

Related Work Order : [82](#)

Move over the sections marked on the map to find out more about the Testbed projects involved. Click on the Links in the description to go to the Work Order(s).

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**RESTRICTED SITE FOR PENNDOT MANAGEMENT AND PRINCIPAL INVESTIGATORS.** In addition to the above pages, these users will have access to detailed work order scope documents and progress reports. Below is a screen that provides links to the Progress Reports.

http://99testbedprojects.pti.psu.edu/W090.html



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### I-99 Information Exchange

Work Order 90

I-99 Information Exchange

Through this project, information regarding I-99 Test Bed projects being conducted by Penn State will be disseminated to PENNDOT, the Federal Highway Administration (FHWA) and other stakeholders. Electronic media will be used to provide up-to-date project information such as presentation materials from both regional and national events, notes from meetings with stakeholders, and monthly progress reports.

[Work Order Scope](#)

[Related Publications and Links](#)

[Progress Reports](#)

For more information please contact:

[Dr. Paul Jovanis](#)

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**MONTHLY PROGRESS REPORTS.** This page presents a list of available progress reports for the selected work order (example WO 90).

<http://99testbedprojects.pti.psu.edu/progressreports90.cfm>



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### List of Available Progress Reports for

Work Order 90  
[I-99 Information Exchange](#)

Month	Details
January, 2002	<a href="#">Report details</a>
February, 2002	<a href="#">Report details</a>
May, 2001	<a href="#">Report details</a>
June, 2001	<a href="#">Report details</a>
July, 2001	<a href="#">Report details</a>
August, 2001	<a href="#">Report details</a>
September, 2001	<a href="#">Report details</a>
October, 2001	<a href="#">Report details</a>
November, 2001	<a href="#">Report details</a>
December, 2001	<a href="#">Report details</a>

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**MONTHLY DETAILED PROGRESS REPORT.** This page presents details of work performed during the month of the report as well as planned activity for the next month. The task is hyperlinked to the work order scope document and can provide the detail information when clicked (example WO 90 – October 2001).

http://i99testbedprojects.pti.psu.edu/progrpt\_detail90.cfm?ProjRptId=57



## I-99 ADVANCED TRANSPORTATION TECHNOLOGY TEST BED

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### Details of Progress Report for Work Order 90

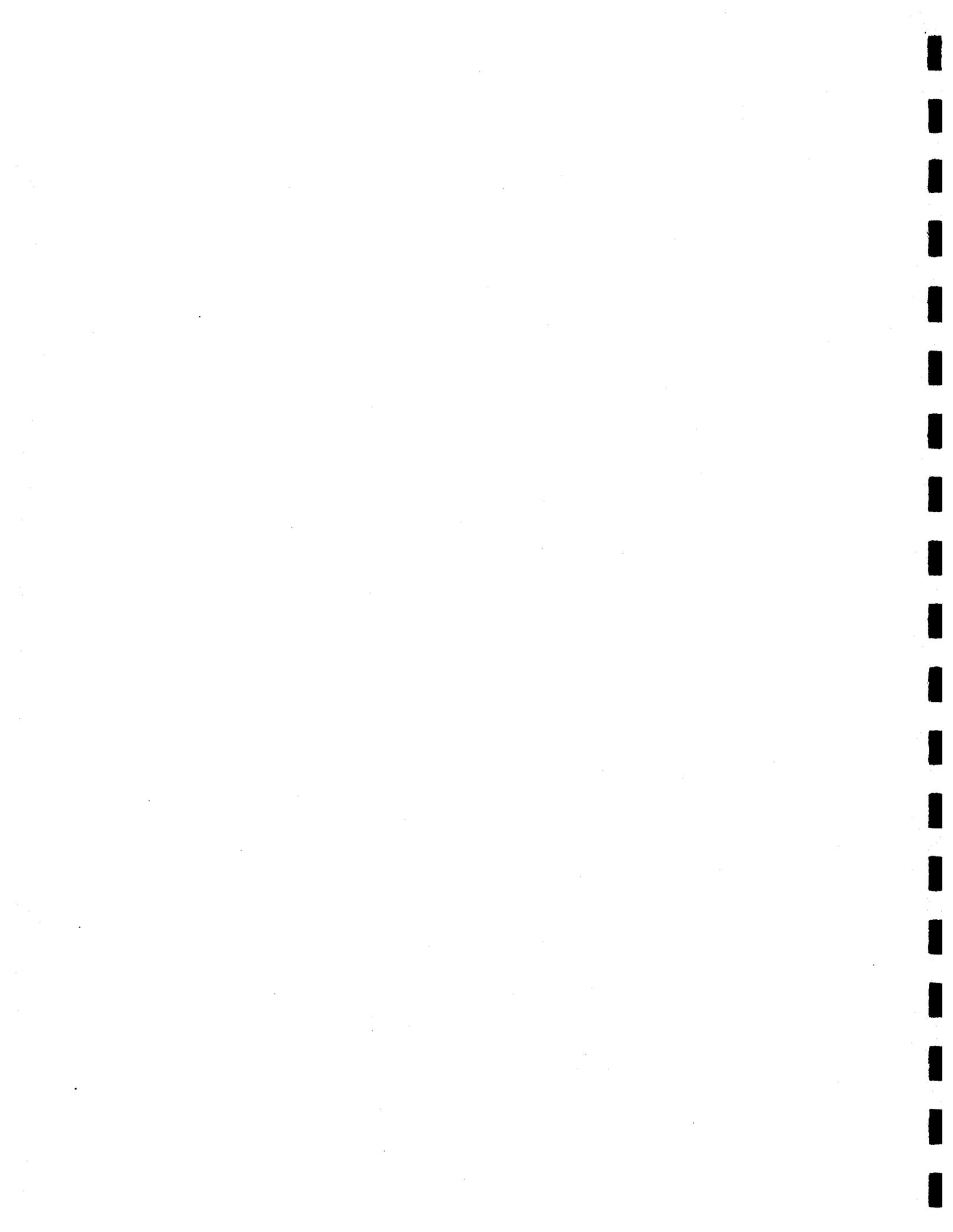
[I-99 Information Exchange](#)

Report Date: 16-Nov-01	For the month of: October, 2001
---------------------------	------------------------------------

Accomplished this month	
<a href="#">Task 2</a>	Completed construction of initial data bases to support web site
<a href="#">Task 2</a>	Completed initial design of web site

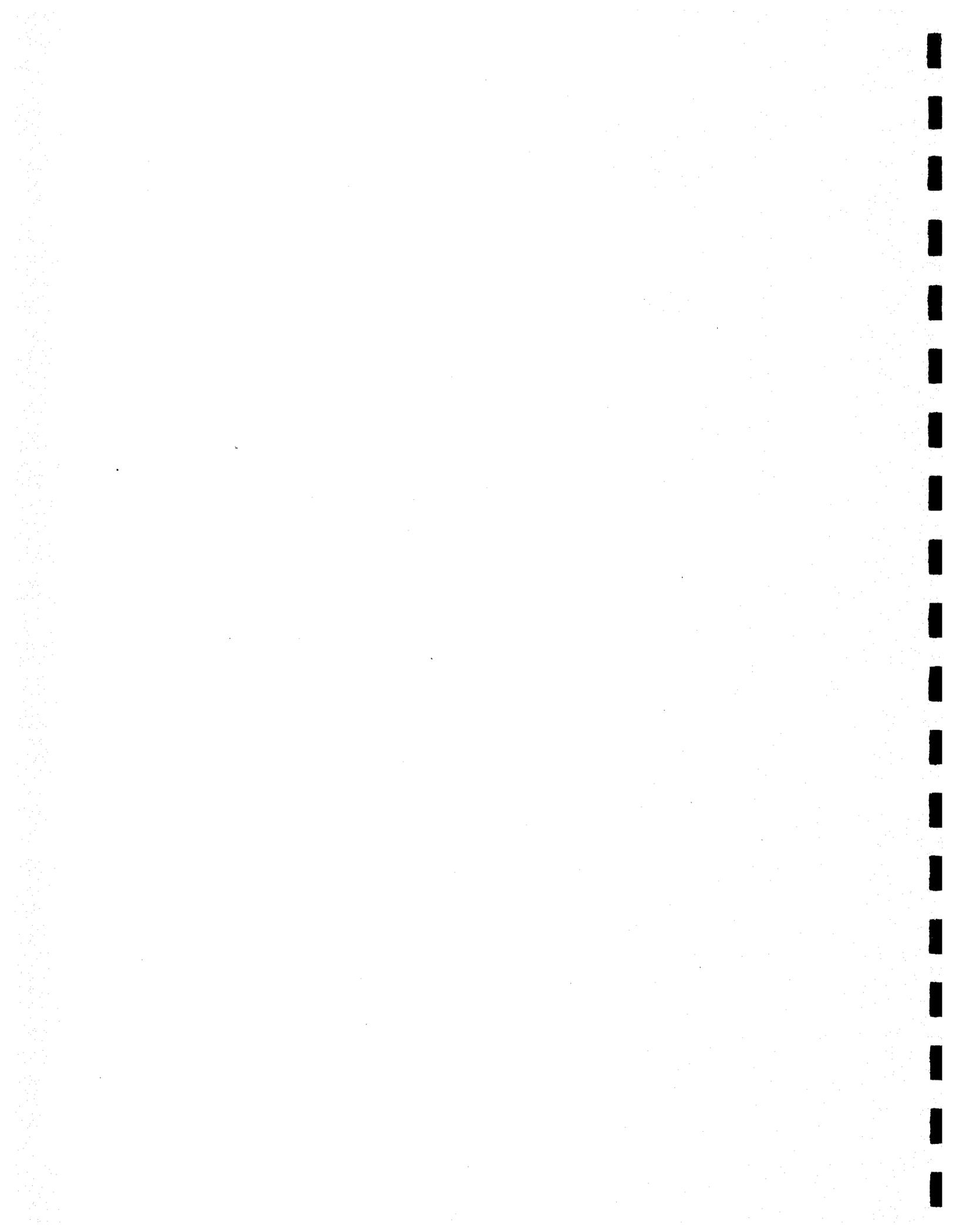
Planned for next month	
<a href="#">Task 2</a>	Continue to refine web site
<a href="#">Task 2</a>	Work with web site users to refine site and document usage

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**APPENDIX A**

**DATA BASE DOCUMENTATION**



# APPENDIX A

## DATA BASE DOCUMENTATION

### ADMINISTRATION SECTION

#### Database Section

Database screens that access this content have been developed. Administrators will have to login to the database to access the specific screens.

Project ID	Parent ID	Contract ID	PIAP ID	Last Update	01/10/2002	
1201	90	359704		Updated By	JMS	
<b>General</b>   Description   Action Dates   Sponsor Managers   Project Comments					Keywords	
Project Title : I-99 Information Exchange					WD Text	
Project PI :	Jovanis, Paul P	Start Date :	05/03/2001	Related Pub		
Project Co-PI :		Current End Date :	05/02/2002	Progress Rpt		
Main Subcontractor PI :		Previous End Date :		Deliverables		
Project Type :	Project	Project Status :	Active	Subcontractors		
Program Area :	COOP	Date PTI # Issued :	07/21/2000	Publications		
Fund Mechanism :	Cooperative	OSP PT # :		Students		
Operational Area :	Agility Initiatives			History		
Total Amount :	\$63,680	Disk # :		Funding		
				Add New to People Table		
Sys ID :	538	Search List	Delete	Add Project	Add Proposal	<< Return
Record:	399	of 508				

The main database screen for project information.

Project ID: 1201    PermDOC W/O ID: 90    Contract ID: 359704    RFP ID:    Proj Sys ID: 538

Project Title: **I-99 Information Exchange**

Project ID: 1201    PermDOC W/O ID: 90    Contract ID: 359704    RFP ID:    Proj Sys ID: 538

Click to Add Item to List

PubName	FileName	FileLocation	WebLinks
Dr. Paul P. Jovanis Home Pa			http://www.engr.psu.edu/ce
Presentation : I-99 Advanced			http://i99testbed.pti.psu.edu/
Presentation : I-99 Advanced			http://i99testbed.pti.psu.edu/
Project Infolink I-99 - overview			http://i99.dickinfoink.com/ov
Project Infolink I-99 - Project I			http://i99.dickinfoink.com/pr
Project Infolink99 - Ongoing F			http://i99.dickinfoink.com/se

Project ID: 1201    PermDOC W/O ID: 90    Contract ID: 359704    RFP ID:    Proj Sys ID: 538

<< Return to Projects

The database screen is for project related publications.

Select Project Plan Action

Project ID: 1201    PermDOC W/O ID: 90    Contract ID: 359704    RFP ID:    Proj Sys ID: 538

Project Title: **I-99 Information Exchange**

Report Period :

May, 2001	10/28/2001
June, 2001	10/28/2001
July, 2001	10/29/2001
August, 2001	10/29/2001
September, 2001	10/15/2001
October, 2001	11/16/2001
November, 2001	12/14/2001
December, 2001	01/15/2002
January, 2002	02/14/2002
February, 2002	03/15/2002

Access Last Portion of Progress Report

Access Financial Portion of Progress Report

Print Progress Report for Selected Period

Create Add New Progress Report

Delete Selected Progress Report

<< Return to Projects

The database screen is for progress reports.

PTI #	PennDOT WO #	Contract #	REPORT	Last Update :	01/10/2002
1201	90	359704		Updated By :	JMS

<b>General</b>	<b>Description</b>	<b>Action Dates</b>	<b>Sponsor Managers</b>	<b>Project Comments</b>	<b>Keywords</b>
<b>Project Title :</b>	I-99 Information Exchange				WD Text
<b>Project PI :</b>	Jovanis, Paul P	<b>Start Date :</b>	05/03/2001		Related Files
<b>Project Co-PI :</b>		<b>Current End Date :</b>	05/02/2002		Progress Rpt
<b>Main Subcontractor PI :</b>		<b>Previous End Date :</b>			Deliverables
<b>Project Type :</b>	Project	<b>Project Status :</b>	Active		Subcontractors
<b>Program Area :</b>	COOP	<b>Date PTI # Issued :</b>	07/21/2000		Publications
<b>Fund Mechanism :</b>	Cooperative	<b>OSP PT # :</b>			Students
<b>Operational Area :</b>	Agility Initiatives				History
<b>Total Amount :</b>	\$63,680	<b>Disk # :</b>			Funding
					Add New to People Table

**Sys ID :** 538      [Search List](#)   [Delete](#)   [Add Project](#)   [Add Proposal](#)   [<< Return](#)

Record: 14 | 399 | of 508

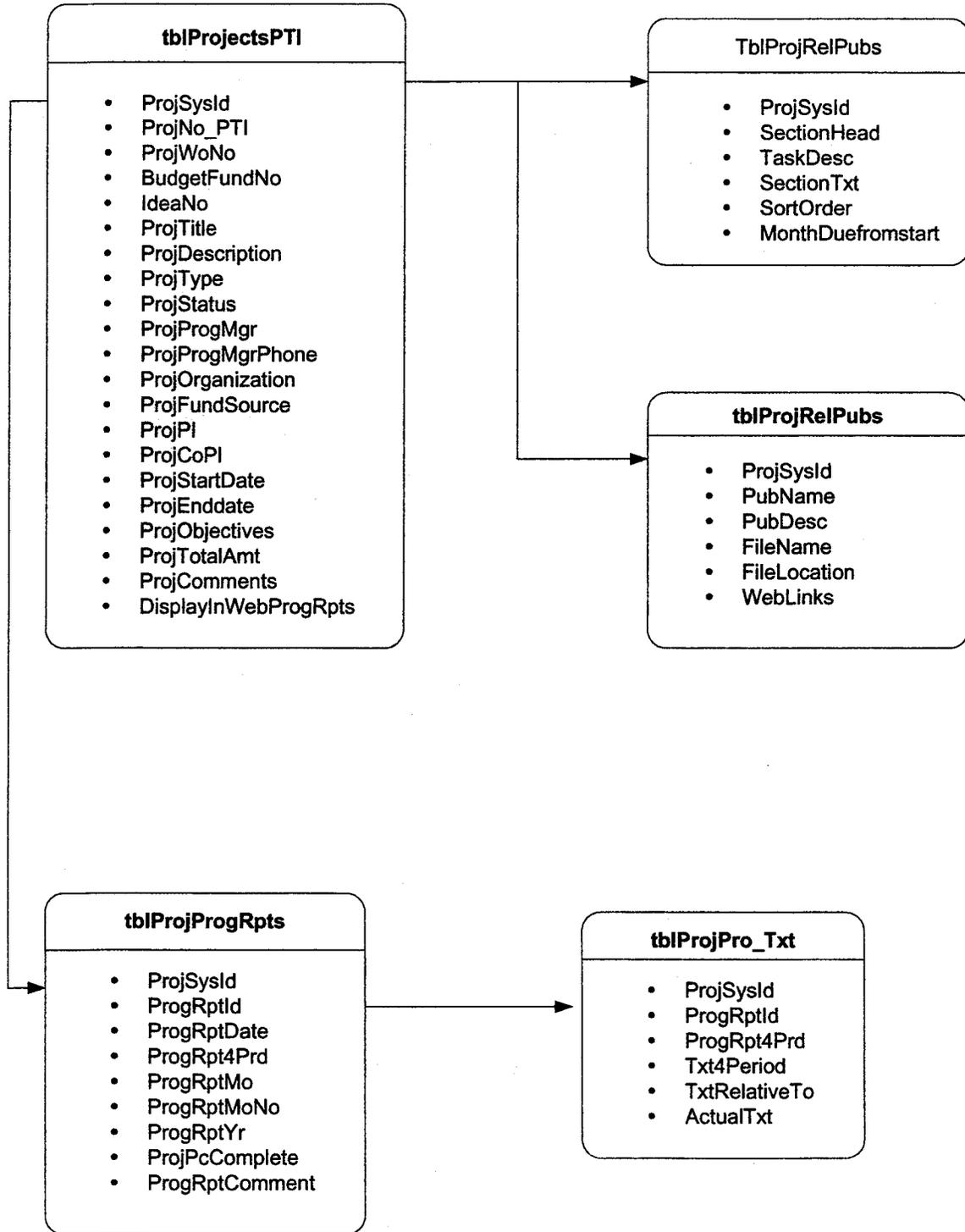
PTI #	1201	PennDOT WO #	90	OSP PT #	538
Project Title	I-99 Information Exchange				
<b>WD Section :</b>	STATEMENT OF THE PROBLEM				
<b>Task Description:</b>	COMMUNICATIONS, REPORTING AND DELIVERABLES				
<b>Task End Month:</b>	ESTIMATED BUDGET				
<b>Section Text :</b>	MANAGEMENT PLAN AND STAFFING				
The objective of the info happening on I-99?	OVERALL PERFORMANCE TIME FRAME				
The recommended approach direct meetings with the Administration (FHWA) effort needed to meet implementation schedule	PROJECT MEETING REQUIREMENTS				
	STATEMENT OF THE PROBLEM				
	Task 1 Define User Needs for Information Dissemination				
	Task 2 Develop Suite of Electronic Media for Information				
	Task 3 Maintain and Update Electronic Media				
	Task 4 Prepare draft Final Report				
	Task 5 Submit Final Report				
	Periodic reports are included as task deliverables.				

[Print WD](#)   [Delete It](#)   [Add Row](#)   [<< Return](#)

Record: 14 | 1 | of 11 (Filtered)

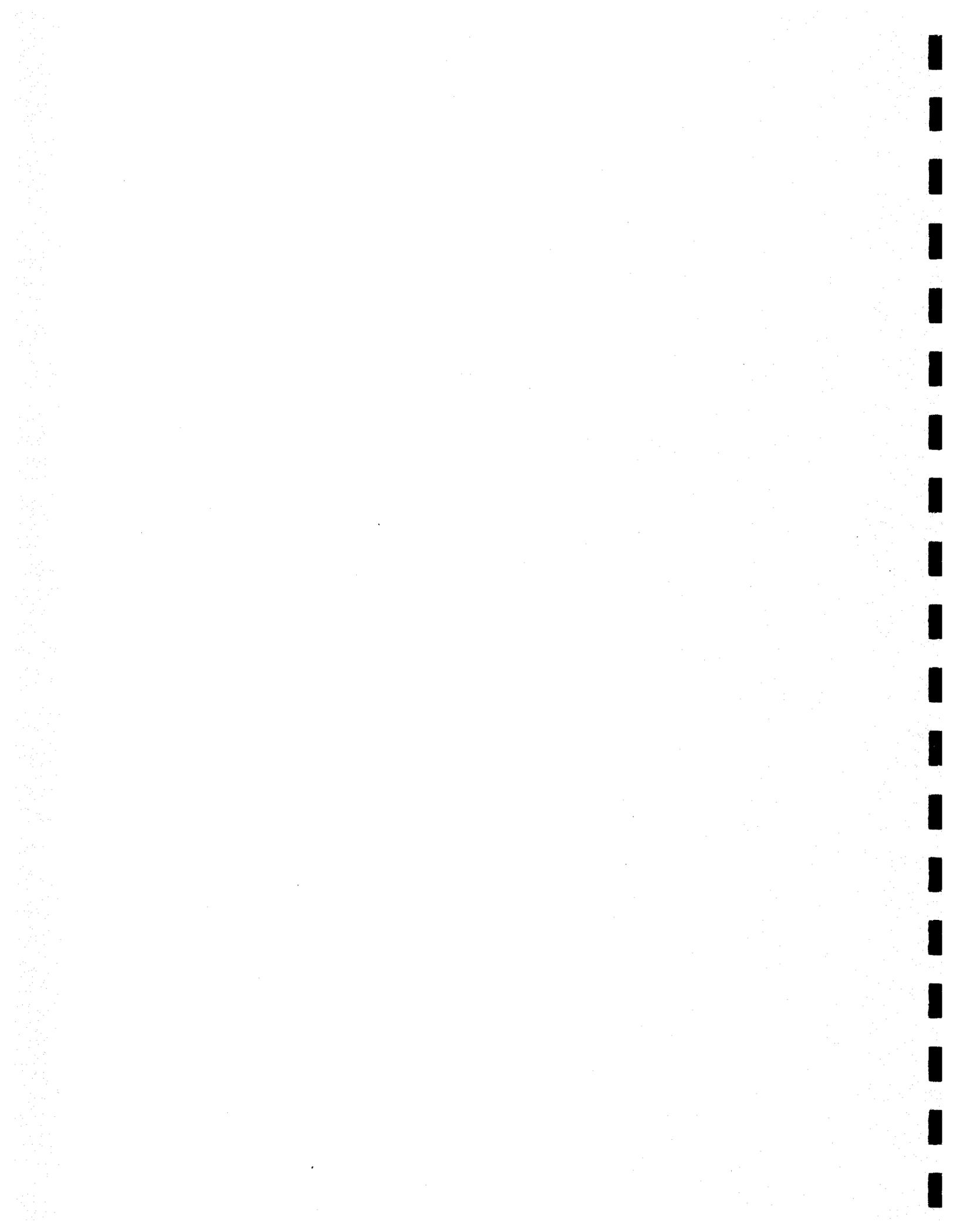
The database screens are for accessing work order scope information.

## I-99 Information Exchange (WO90) Database Diagram



**APPENDIX B**

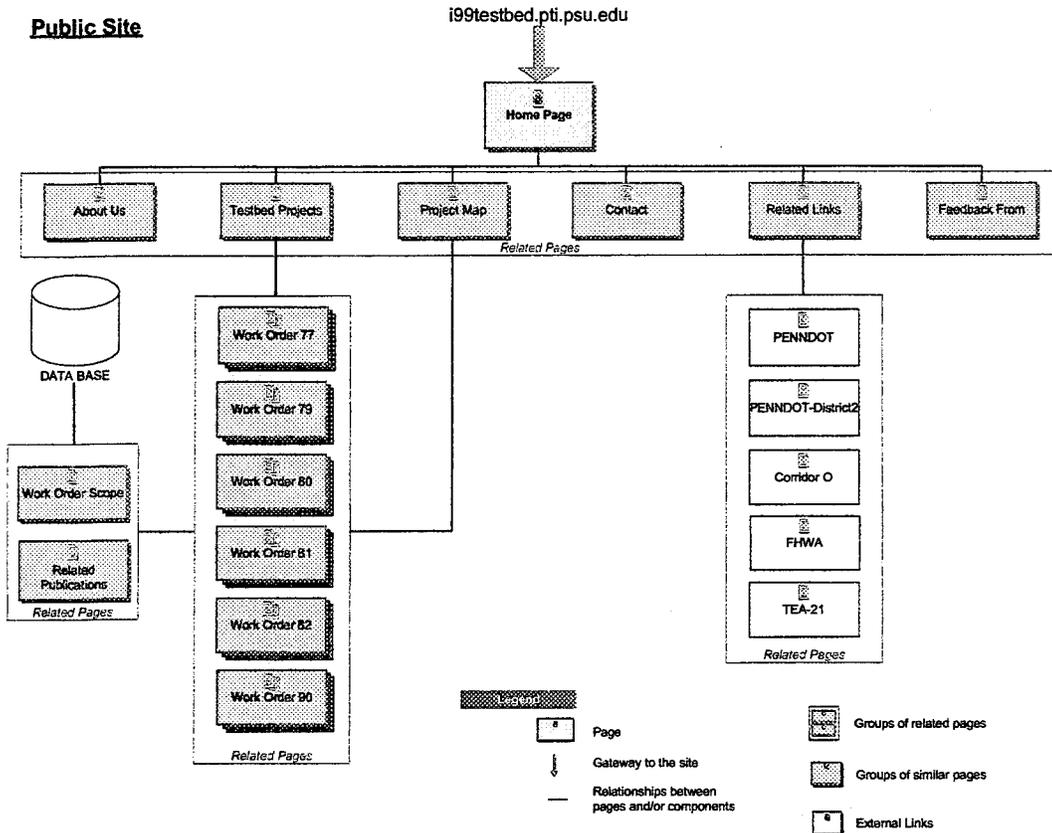
**STRUCTURE OF WEB SITE**



# APPENDIX B

## STRUCTURE OF WEB SITE

### PUBLIC SITE



# RESTRICTED SITE

