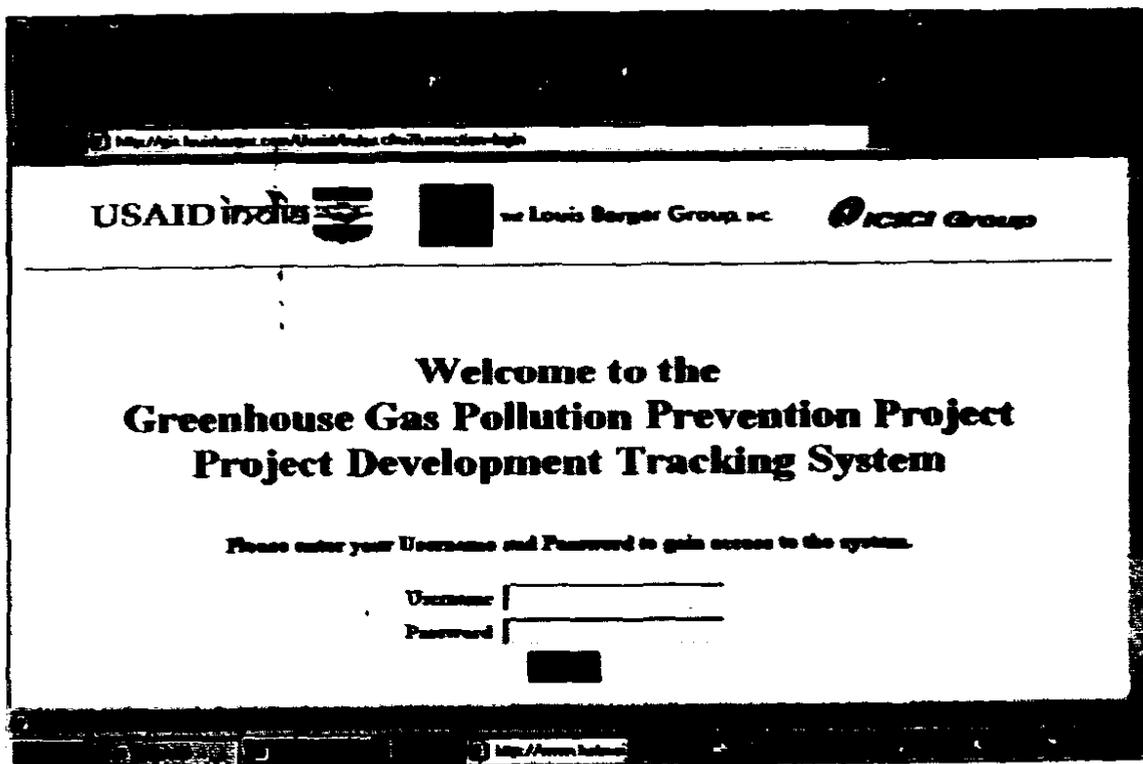


United States Agency for International Development

**Greenhouse Gas Pollution Prevention Project
Climate Change Supplement
(GEP - CCS)**

**Project Development and Financing
Task 3.A
Project Tracking Format**



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LIST OF ACRONYMS

| | |
|-------|---|
| CCC | Climate Change Centers |
| CII | Confederation of Indian Industries |
| DA | Development Alternatives |
| FI | Financial Institution |
| GIS | Geographic Information System |
| ICICI | Industrial Credit and Investment Corporation of India |
| IT | Information Technology |
| LBG | The Louis Berger Group, Inc. |
| PTS | Project Tracking System |
| SME | Small and Medium Sized Enterprises |
| USAID | United States Agency for International Development |
| WWW | World Wide Web |
| NGO | Non Government Organization |



Executive Summary

Global climate change is one of the most complex and challenging issues that governments around the world are confronted with today. The intensity and complexity of the problem has stimulated an international dialogue on environment, economics and development rarely seen before.

As one of the large emitters of greenhouse gases in the world, India has begun to confront the issue of climate change in a number of ways. As an example, the Indian private sector and industry have created momentum for developing energy efficient and renewable energy projects to reduce GHG emissions. Through USAID/India support, Climate Change Centers (CCCs) have been established at the Confederation of Indian Industry and Development Alternatives. The CCCs have helped catalyze development of GHG emission reduction projects in the industrial, power and city management sectors.

The Louis Berger Group, Inc. is providing technical assistance to the CCCs to strengthen their institutional and technical capabilities to provide project development assistance, brokering and facilitating services to their respective constituents. As part of this assistance, the LBG/GEP has strategically partnered with the LBG Geographic Information systems Group to design a web-based tool, the Project Tracking System (PTS), for tracking GHG emission reduction projects. The PTS will enable a diverse group of stakeholders from around the globe to access information on these projects. The information in the PTS will help stimulate discussion and information exchange and can be used to market these projects in a manner that promotes the potential for their implementation.

The Greenhouse Gas Pollution Prevention PTS can now be viewed around the world at:



Once the website is officially launched and marketed, a new user-friendly web address will be chosen.

The Berger GIS Division provides full-service GIS consulting, implementation, integration, and support service firm. Berger specializes in providing mapping and GIS solutions for a wide variety of applications. Berger has a wealth of experience using GIS software for environmental, transportation, development, and other disciplines.



I. INTRODUCTION

As part of United States Agency for International Development /India Mission (USAID/India) strategic climate change focus, the Mission has been working to build the capacity of local Indian stakeholders to provide outreach and create the awareness of the impacts of global climate change on India's economy, society and environment.

Through these efforts, two Climate Change Centers (CCCs) were established at the Confederation of Indian Industry and at Development Alternatives to specifically foster dialogue amongst a wide-ranging assembly of Indian stakeholders. The CCCs have been extremely successful in providing outreach and building awareness to their respective constituency. These efforts have catalyzed GHG emission reduction project development and have provided the foundation for continual awareness on GCC in India. The CCCs are building upon this established foundation and are providing technical assistance within their constituency on GHG emissions project development.

The Louis Berger Group, Inc. Global Environment Team is currently implementing the *Greenhouse Gas Pollution Prevention Project (GEP) Climate Change Supplement (CCS)* and has been commissioned to provide tailored technical assistance and training to the CCCs to strengthen their institutional capacity and technical capabilities. The assimilation of the proper tools and techniques will enable these centers to provide efficient facilitation and facilitator services.

Today, the CCCs have generated a pipeline of over 40 GHG emission reduction projects, primarily focused on energy efficiency and renewable energy. The CCCs are in the process of developing processes and tools to evaluate and track these projects. Basic information on the technical and financial aspects of these projects is available at the CCCs. As the CCC projects move forward, LBG/GEP has recognized a need to develop an accessible, interactive tool that will provide a variety of stakeholders access to project information. A web-based tool will create that access and foster dialogue to discuss opportunities and constraints in designing and securing financing for projects.

"To create a forum for "a world of stakeholders" to interact and discuss cutting-edge project development in India."

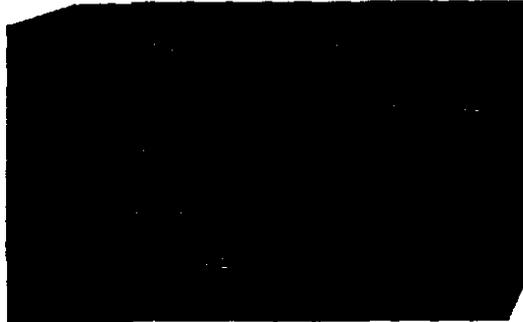
- Julie M. Haines, Vice President, Global Environment Team

The LBG/GEP team, in association with LBG Geographic Information Systems (GIS) Division, has designed an interactive web-based project tracking system that will allow viewers an opportunity to view real-time information on Indian GHG emission reduction projects.

"The web is the innovative tool of today and can change with the evolution of time and the demands of tomorrow"

- Ray Freeland, Director, LBG/IT Division

The design features of the project tracking system will be described in greater detail in the following sections. In summary, the system provides searchable query access to projects via methods shown the following text box:



As UNFCCC and international negotiation on climate change policies evolve, LBG/GEP recognizes the need to ensure the PTS has the flexibility to meet changing needs and is managed to meet those needs. It has been designed with this requirement in mind.



II. METHODOLOGY

A. *Climate Change Center Project Tracking and the Need for an Interactive Tracking Tool*

"Project Development is contingent upon the success of a handful of projects. These successes will lay the foundation...the framework for catalyzing prospective development in the future."

— Paul Schwengel, US Environmental Protection Agency, Climate Division

At present, GHG emission reduction project information is maintained in static databases at both CCCs and is updated from time to time. Hence, project information not available to the variety of stakeholders interested in GHG emissions reduction projects, nor is it synthesized in one location that can provide stakeholders a comprehensive view of the types and status of such projects.

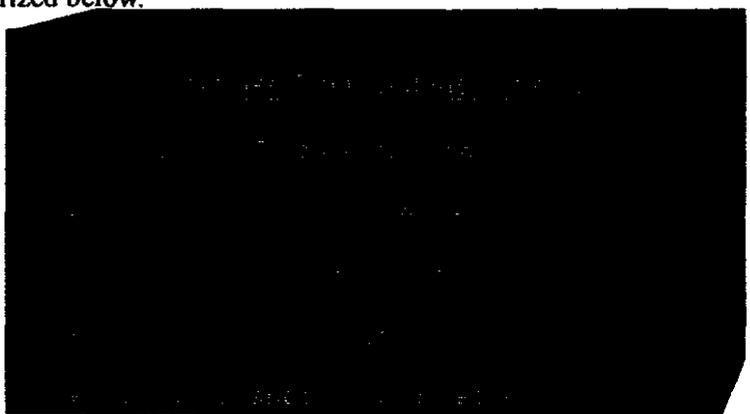
USAID/India recognized that in order for the CCCs to be successful and sustainable in their respective project development efforts, a system or tool was necessary to help the CCCs track the development of these projects and to communicate to stakeholders about them. In consultation with the CCCs, LBG/GEP determined that an interactive, web-based tracking tool is the sustainable, cutting-edge approach for meeting the CCCs project tracking and communication needs. The next section will illustrate how the PTS meets CCC needs for project development.

B. *"A Web-Based Tool for All Stakeholders"*

By making the project development process transparent to many key stakeholders, the PTS will dramatically facilitate their access to information. This reduces the "transaction costs" these stakeholders would otherwise face in learning about and facilitating GHG emission reduction projects. The PTS thus serves as a marketing tool to garner understanding of and support for these projects. Its value as a marketing tool for individual stakeholder groups is summarized below.

Financial Institutions

The process of marketing a specific GHG reduction project to financial and/or commercial lending institutions is a long process. Negotiations and communications between project developers and lending institutions that are located in different regions of the world can be difficult. This is a common obstacle or barrier that is not



unique to India. The PTS will lower this barrier by allowing project developers to showcase project information to financial institutions located around the world, provide them with real-time project information and serve as a catalyst for information exchange that can promote project funding.

Federal, State and Local Government of India

The PTS will enable the GOI to access information on GHG emissions reduction projects in India. State government officials will be able to use the system to identify projects currently being developed in their particular state. This will enable these decision makers to see that momentum for these projects is real, that the projects are real and marketable and that it is in their interest to be aware of and facilitate project development efforts. Their ability to see that GHG emission reduction projects are being successfully implemented will catalyze the GOI and state decision makers to take a more active and supportive role in creating an enabling environment for project success.

Private Sector GHG Emissions Project Developers

The GHG emission reduction project developers are obvious beneficiaries of the marketing power of the PTS. By being able to showcase their projects to local and international interests institutions, developers can benefit from information exchange with the full range of stakeholders. This can help them strengthen the technical elements of their projects and maximize interest on the part of financial institutions. Developers can also share information and lessons learned with stakeholders in a manner that reinforces prospects for GHG emissions projects in general.

The PTS is a very cost effective mechanism for project marketing. It will be especially valuable for SMEs or other developers with limited resource capabilities. So not only does the PTS reduce transaction costs for outside stakeholders, it also does so for the developers themselves.

LBG/GEP anticipates that the system will be instrumental in spurring interest among progressive industry leaders and should be marketed to industry leaders or "champions" during the Industry sector roundtables sessions (CLIN 5).

NGOs and the Environment Community

NGOs and the environment community have and will continue to be key champions for fostering awareness of and political and social will for addressing climate change. The PTS will provide these interests with another "piece" of the climate change information puzzle that should help them create a stronger foundation for developing programs to promote climate change issues.

USAID/India

The PTS gives USAID/India an opportunity to maintain real-time access to the most current and updated information on project development across India. USAID/India will be able to record the progression of the projects being developed and those being provided technical assistance by LBG, CII and DA. USAID/India will also be able to showcase the PTS to other partnering donor agencies.

The Louis Berger Group, Inc. GEP Team

The PTS will provide the international GEP team an efficient tool for tracking and monitoring the project development process. This will enable the GEP team to better manage the project development process, improve its efficiency, target opportunities and constraints and take advantage of strategic opportunities to maximize the quality and number of projects that are brought to closure under GEP guidance and ensure that project data quality is maintained to meet the needs of all stakeholders.

The collection of stakeholders who will ultimately have access to the PTS is unlimited. The graphic below portray the users who will most likely frequent the PTS site.



III. DESIGN ELEMENTS OF THE PROJECT TRACKING SYSTEM

During the design phase of the PTS, it was recognized that there were several key design elements that would need to be taken into consideration to its ensure applicability for a wide stakeholder group in India.

As it was discussed earlier, the PTS is envisioned to be an interactive tool that will be used by a diverse group of stakeholders from around the world. To ensure maximum usage of the PTS, it must be user-friendly and a source of the most current information available. It has been designed to ensure these two key parameters are met. Surfing the site is easy and possible via variable search queries discussed earlier. A protocol for maintaining and updating information on a regular basis has been instituted by the LBG/GEP teams in New Delhi and Washington D.C.

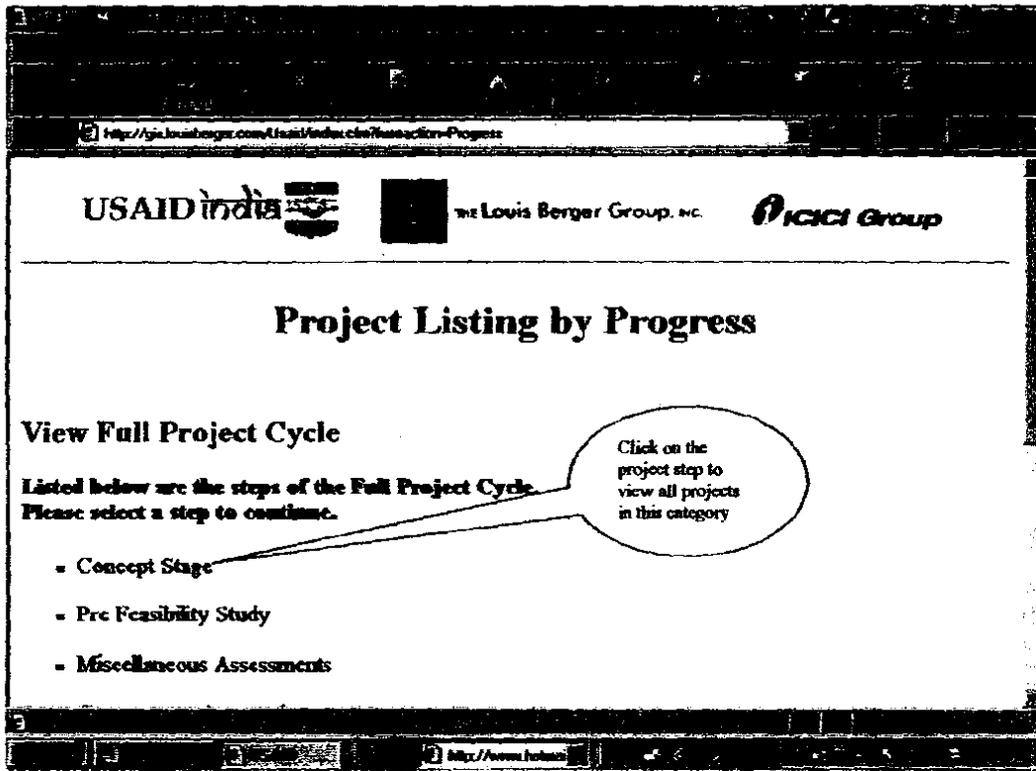
The PTS has been designed with low resolution/bit graphics to allow the system to have illustrative graphics without causing delays when downloading project reports from the system. This is especially important for user friendliness in India where access to Internet portals can sometimes be slow or inconsistent.

A. Project Tracking via Progress

The goal of the PTS system is to improve stakeholder access to information on the development cycle of each of the posted GHG emissions reduction projects. While the project development cycle for each project may vary to some degree based on its characteristics or financial requirements, there is predictable, common framework that every project will proceed through from design through financial closure. These elements are illustrated in the adjacent box:

As shown in Exhibit 1, the PTS user will have the option to view projects by any phase in their development cycle. This will allow the user to view all projects that have advanced to a particular phase. In the future, a systematic reporting format for each phase may be designed that will provide specific details on each project by development phase. Such information could provide guidance or data to stakeholders that enable them to understand opportunities and successes or barriers and challenges to project development in any particular phase. There may be limitations to the type of information available due developer confidentiality concerns.

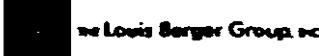
EXHIBIT 1



As illustrated in Exhibit 2 (in three screen pictures) below, the user has the option to view all projects the corresponding stage in the development cycle to which each project has advanced.

EXHIBIT 2

<http://pjs.bainbridge.com/Used/India.cfm?operation=ProjectCycleSetup-Tab>


Project Listing by Progress for the Full Project Cycle

| | Concept Stage | Pre Feasibility Study | Miscellaneous |
|---|---------------|-----------------------|---------------|
| 22 MW Bagasse based High pressure cogeneration system Sri Channadeswari Sugars Ltd | [Redacted] | | |
| 27 MW Bagasse based High Pressure Cogeneration System Auro Energy Limited | [Redacted] | | |
| 40 MW bagasse based high pressure cogeneration system Sakti Sugars Limited | [Redacted] | | |
| 54 MW Bagasse based High pressure cogeneration system Supreme Renewable Energy Limited | [Redacted] | | |
| Bagasse Based Gasification Cogeneration System Ram Entech Limited | [Redacted] | | |

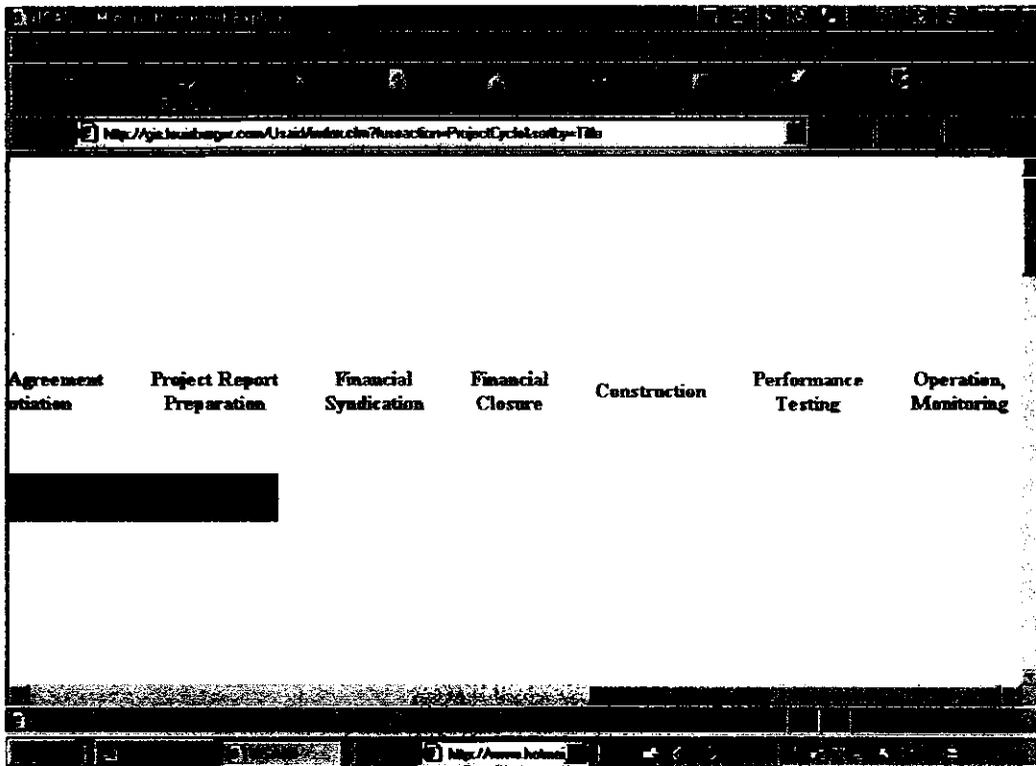
<http://www.bainbridge.com>

<http://pjs.bainbridge.com/Used/India.cfm?operation=ProjectCycleSetup-Tab>

| Miscellaneous Assessments | Government Approval | Project Agreement Negotiation | Project Report Preparation | Financial Syndication | Financial Closure | Con |
|---------------------------|---------------------|-------------------------------|----------------------------|-----------------------|-------------------|-----|
| [Redacted] | | | | | | |

<http://www.bainbridge.com>





The viewable Full Project Cycle will be instrumental from a macro point-of-view in identifying the progress of all of the projects within the system. As projects proceed through the cycle, information for each step in the cycle will remain so their counterpart project developers can properly examine the process the project has gone through. In order for the PTS to be useful, the information for each step needs to be detailed and comprehensive.

B. Comprehensive Informational GHG Reduction Project Database

The Information Database, illustrated in Exhibit 3 on the following page, is the core of all the project information that is provided on the website. It is a consolidated database that currently contains over 40 projects in the development pipeline of the CCCs. The CCCs have provided LBG/GEP the detailed project information for each of these projects. The information that has been posted is considered to be non-sensitive and available for public access.

The information database will be expanded over time as the CCCs and LBG develop more projects and obtain updated information on existing projects.



EXHIBIT 3

http://pjt.inhibergroup.com/Usaid/India.cfm?function=GHE_RPD

USAID India   the Louis Berger Group, Inc.  ICICI Group

Click to sort the field

Greenhouse Gas Reduction Project Database

| | Please Select... | Please Select... | Please Select... | Please S... |
|----------------------|---|--------------------------|------------------|---------------|
| Aben Emerges Limited | Unknown | Development Alternatives | Tamil Nadu | Chennai |
| ACC-RCD | Waste Heat Recovery for Power generation using Kalina | CI | Karnataka | Gulbarga Dist |

http://www.inhibergroup.com

http://pjt.inhibergroup.com/Usaid/India.cfm?function=GHG_RPD

ICICI Group

Database

| Please Select... | Please Select... | | | | |
|------------------|------------------|------------------------------------|--------------------------------------|------|----------------------|
| Chennai | Unknown | Wind Energy Project | Unknown | | over year(s) |
| Gulbarga Dist | Cement | Kalina Cycle WHR thro WHRs and TGe | Heat Exchangers and Turbo Generators | 2000 | 32633 over 1 year(s) |

http://www.inhibergroup.com



C. Location of Projects

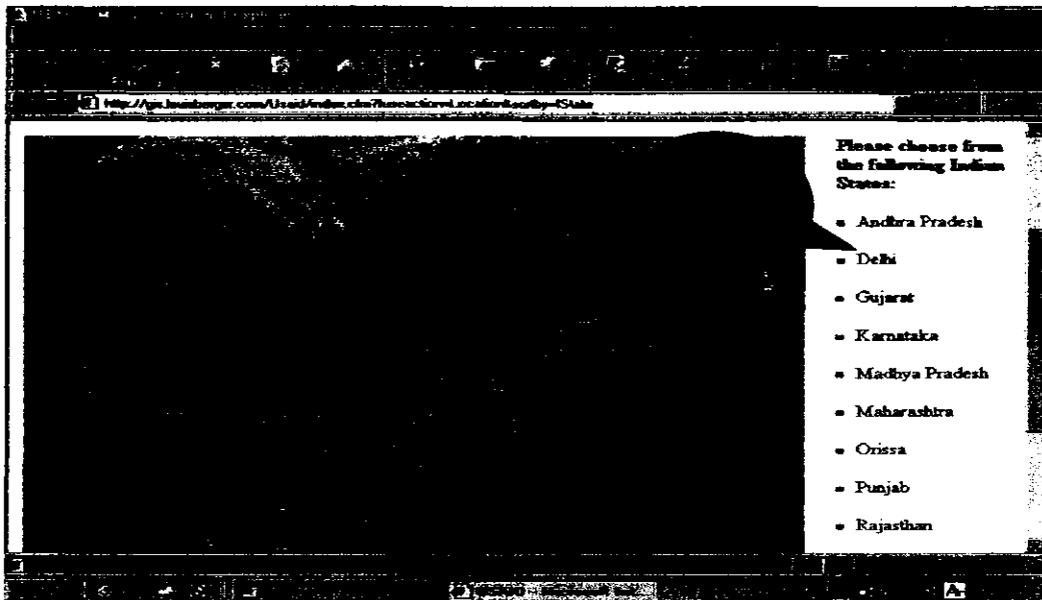
The PTS has a unique feature that allows the user to identify projects by location. There are two mechanisms for doing so.

The first mechanism allows the user to click on a state name as shown in Exhibit 4. This opens a window to a listing of all projects located within that state. As noted previously, this mechanism will be quite useful for Indian State Governmental officials to identify and track projects in their states and to compare the progress of project development in other regions. As more projects are developed, the state selection query could be narrowed down so project searches could be done on a municipal level. However, this potential will be contingent on the confidentiality sensitivities of project developers. The second mechanism enables the user to click on a state name on the satellite map. Both queries will provide the browser with identical information.

D. Information Maintenance "Real-Time Information"

PTS information will be updated and maintained on a regular basis by LBG/GEP New Delhi office. LBG/GEP New Delhi will coordinate with the respective CCCs on a regular basis to ensure that the posted information is current and is provided to users on a "real-time" basis. LBG/GEP Washington D.C. will be responsible for coordinating with the GIS/IT department to ensure design modifications are made to meet evolving needs.

EXHIBIT 4



IV. Security Features

LBG/GEP understands that the project information in the PTS could be sensitive and/or proprietary. Therefore, LBG has designed the system, so that every user must enter a security Username and Password to gain access to the site as shown in Exhibit 5. It is understood that over time, the PTS will be open to full public access. The timeframe for this has not been discussed, although it has been agreed to by the CCCs. The initial launch of the site shall be password protected. LBG/GEP is collaborating with the centers to identify a protocol for avoiding the posting of sensitive information.

The security feature has been designed to provide four levels of access to the PTS. These three levels are:

| | | |
|------|-------------------------------------|--|
| I. | The Louis Berger Group, Inc. | Overall Administrative and Technical Maintenance |
| II. | Climate Change Centers (CII and DA) | Administrative Capabilities |
| III. | USAID/India - ICICI | Full-Access to all PTS information |
| IV. | Public Viewers | Access to PTS information |

EXHIBIT 5

The following methods are used to ensure security of access to the PTS:

1) Username and Password login

A valid user name and password is required to enter the system. Each user can have his or her own user name and password to eliminate the need to share passwords that might compromise the security of the system. A user, or the administrator can also change a password at any time. No one, including administrators, is allowed to view passwords.

The system allows for an unlimited number of users, so all users should have individual logins. The system also allows for multiple levels of user access. Administrators have full web-site access; other users may be restricted to certain functions, data and pages.

There is a log off link at the bottom of the main menu, so that an unauthorized user cannot click the back button or access user bookmarks to gain access to the site once an authorized user has logged off. The system allows for a maximum active session of 2 hours, after which time a user is required to log in again. A user may have a maximum inactive session of 30 minutes, after which time he or she must log in again.

2) Fusebox

The Fusebox is a programming method that works much like a fusebox in a home. It allows the web site to be divided into many parts, all of which run independently, but rely on the fusebox to reach the outside. Thus, if one section of the website fails, it will not affect other sections. In each section of the site, a check is made to ensure that the user is logged in and authorized to be at that page. This also makes sure that the correct content is shown to the right user. If a user is not logged in or is not authorized to be at that page, the user is redirected to the login screen.

All user bookmarks require an active logon session.

The fusebox eliminates the possibility of users directly accessing individual pages. All web page access must occur through the main menu and URL. If not, they are taken to the login page.

3) Secure Sockets Layer (SSL) Protocol

This method has not yet been implemented on the System. It is a high security encryption method between the server and the user that ensures the passwords and data being sent over the Internet are secure. Using this protocol will require that the users "sign" a digital certificate the first time they visit the site. Users visiting the site will type in the site address with the prefix of **https://** instead of **http://**, indicating the use of the secure channel. If the user does not enter the secure channel, they are automatically taken there. If they refuse to "sign" the digital certificate, they are denied access to the PTS.

