

2N-104-111

CLIN 6: Policy-Level Exchanges Between India and U.S. Counterparts

Subtask 6.B

- *Emerging Climate Change Research and Policy Study Tour*
- *Integrated Transportation, Management and Technology Policy Exchange*



Presented to



United States Agency for International
Development - India Mission

Greenhouse Gas Pollution Prevention Project -
Climate Change Supplement

Implemented by

The Global Environment Team
The Louis Berger Group



THE Louis Berger Group, Inc.

2300 N Street, NW
Washington, DC 20037 USA

The Louis Berger Group, Inc
Contract No. 386-C-00-00-00058-00
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**EMERGING CLIMATE CHANGE RESEARCH
AND POLICY STUDY TOUR**

Washington, D.C.

May 10-15, 2001

I. GOAL

The goal of the study tour was to increase the level of awareness of Indian researchers on emerging research and practices that could be adopted by India to support greenhouse gas mitigation and climate change adaptation from the country.

II. OBJECTIVES

The prime objective of this study tour was to maximize the impact of the research framing papers to be prepared by the joint U.S./Indian research teams as part of the upcoming U.S. Research Forum. The study tour promoted the GEP-CCS objective of building U.S./Indo partnerships. As a result of the tour, a much wider, more diverse network of U.S./Indo research partnerships between individuals and institutions was created than would otherwise have occurred in the absence of the study tour. These partnerships will be longer-term in nature because the study tour will enable counterparts to develop deeper professional and personal relationships.

III. LINKAGES TO THE GEP-CCS PROGRAM

The collaborative research under CLIN 4D will become a significant learning tool that will help GEP-CCS stakeholders understand the affect of climate change in India and facilitate GEP-CCS project activities. Stakeholders to whom the papers will provide valuable information include: LBSNAA, GOI and the Climate Change Centers (CLIN 1); financial institutions (CLIN 2); project developers (CLIN 3; industry and municipalities and other stakeholders participating in GEP-CCS roundtables (CLIN 5); municipalities, government officials, public stakeholders, industry interests and other involved in GEP-CCS activities related to promote reduced GHG emissions from vehicles and from municipal solid waste sites (CLINs 7 and 8, respectively). The research results will also be promoted to audiences outside GEP-CCS's primary stakeholder group.

To maximize the impact of the papers, it was imperative that the Indian researchers have as much exposure to U.S. expertise, sources of technical information on their respective research topics and networks of U.S. experts who can provide support to the researchers as possible. The tour also enriched the U.S. researchers by giving them a better understanding of the Indian perspective and in turn, enabling them to more realistically reflect that perspective in their own research. The tour enabled the research teams to come to the Forum fully prepared and with established, productive partnerships already established. The results were more productive, more result oriented Forum, and therefore, richer, more technically sound and targeted framing papers.

IV. STUDY TOUR PARTICIPANTS

- **Dr. Jyoti Parikh ***
Indian Delegation Lead
Indira Gandhi Institute for Development Research
- **Dr. Dilip Ahuja**
National Institute of Advanced Studies
- **Dr. Amit Kumar Garg**
Indian Institute of Management – Ahmabadad
- **Dr. Kirit Parikh**
Indira Gandhi Institute for Development Research
- **Dr. Anand Patwardhan**
Indian Institute of Technology - Bangalore
- **Dr. Manoj Panda**
Indira Gandhi Institute for Development Research

V. STUDY TOUR SCHEDULE

WASHINGTON D.C.

Thursday, May 10, 2001

- The Louis Berger Group, Inc. - *Global Environment Team*
- World Resources Institute – *Climate, Energy and Pollution Programs*
- *Tour of WRI “Zero-Emissions” Facility*

Friday, May 11, 2001

- United States Agency for International Development – *Bureau of Global Programs*
- U.S. Global Change Research Program – *U.S. National Assessment Coordination Office, Intergovernmental Panel on Climate Change U.S. Coordination Office*
- International Institute of Energy Conservation/Civil Engineering Research Foundation

Monday-Tuesday, May 14-15, 2001

- LBG-WRI U.S. Research Forum

VI. OVERVIEW OF MEETING SCHEDULE

**WASHINGTON D.C.
MAY 10-16, 2001**

Thursday, May 10, 2001

World Resources Institute (WRI)
Climate, Energy and Pollution Programs

- Dr. Anothy Janetos, Senior Vice President and Chief of Programs
And Co-Chair of the U.S. National Assessment
- Mr. Kevin Baumert, Associate, Climate, Energy and Pollution Program
- Mr. Pankaj Bhatia, Associate, Business and Climate Change

Background

World Resources Institute provides information, ideas, and solutions to global environmental problems. WRI's mission is to move human society to live in ways that protect Earth's environment for current and future generations.

WRI's climate change programs aim to identify opportunities to reduce the risk of global Climate Change in ways that drive sustainable economic development worldwide. WRI's core climate efforts are clustered around three strategies: Engaging the Private Sector-WRI's Climate Protection Initiative (CPI) works to accelerate the business community's acceptance of climate change as a real, manageable problem as well as encourage innovative private sector solutions; Developing country partnerships - WRI works to contribute to developing countries' effectiveness in negotiating and implementing international climate treaties; Reducing the energy and carbon intensity of their development paths to gain benefits from reduced local and regional air pollution and increased economic and energy efficiency; and capturing benefits of carbon sequestration, through sustainable forestry and agricultural practices.

Meetings Notes

The researchers were primarily interested in WRI's emerging research methodologies on climate change issues. All of the researchers agreed that due to the evolving subject matter it was critical that new research interventions and methodologies be employed. WRI explained that they have recently launched a new website entitled "Earth Trends" to provide a "one-stop shopping" website for emerging and archival environmental information. The environmental information portal will provide searchable databases, country profiles and will explore issues from coastal, marine systems to energy and environment.

WRI discussed its desire to strive for simplicity in creating explanatory models, as the models will thereafter become a tool for a greater audience. Dr. Dilip Ahuja felt that the website would provide an easy access to decision-makers who need validated, concise technical information to make informed decisions. Dilip further explained that based on his previous tenure at the GEF, they were always in need of identifying one source to collect new and archival data.

As a pilot demonstration, WRI has created a series of downloadable informational maps that have been launched on the Earth Trends website. The maps detail the site's ten environmental themes and provide relevant spatial data. These maps illustrate a variety of related environmental topics -

from wetlands to human development to eco-systems—and include descriptive text and analysis, as well as information about how each map was developed.

The researchers were interested in the Energy focused maps, which were presented. The one of particular interest illustrated the per capita carbon emissions (in tons) at a country level. The highest per capita emissions were found in the U.S. Canada, Australia. The maps were created based on U.S. Department of Energy Information. Dr. Manoj Panda and the group discussed at some length the methodology for creating the maps.

The researchers were interested in new strategies to engage worldwide business to take proactive measures in reducing GHG emissions. Dr. Pankaj Bhatia presented on the *GHG Protocol Initiative* that addresses the corporate bottom line issue of profit and, more importantly environment and social aspects. The protocol provides business a framework for corporate accounting and reporting standards. These modules provide a systematic process to identify, calculate and report GHG emissions. The researchers felt that this mechanism could prove to be valuable in the Indian scenario, but felt that the protocol would need to be shaped to build upon national government policies to reduce GHG's. The researchers expressed interest in working with WRI in testing the various methodologies of the protocol as it is designed per industry sector.

Dr. Jyoti Parikh felt that the protocol was an exceedingly valuable tool for the Indian context due to the lack of concise information available to industry representatives. Dr. Parikh felt that the methodologies could be received by Indian industry but need to ensure that they are "Indianized" to consider factors relevant to the country.

Breakout Session

Upon the conclusion of the meeting, several breakout sessions were held to discuss specific research papers.

- Dr. Manoj Panda – Mr. Kevin Baumert: Met to discuss the Macroeconomic research paper
- Dr. Boni Biagini – Mr. Anand Patwardhan and Mr. Kirit Parikh: Met to discuss the range of issues to be covered under the Vulnerability research paper.

Friday, May 11, 2001

**United States Agency for International Development (USAID)
*Bureau for Asia and the Near East (ANE)***

- Ms. Cindy Lowry, Environmental/Global Climate Change Adviser
- Ms. Virginia Gorsevski, Environmental/Global Climate Change Adviser

Background

The purpose of the meeting was to familiarize the researchers with USAID climate change programs and strategies as well as the research material and the other resources, which the researchers could avail themselves.

Meeting Notes

Ms. Lowry presented and discussed with the group the recently commenced *South Asia Regional Initiative for Energy Cooperation and Development*. The SARI program will play a critical role in bridging public and private energy stakeholders to discuss cross-border energy cooperation. The program will build the institutional capacity of a regional stakeholder community of NGO's, regulatory bodies, private sector to enhance their technical capabilities to promote cooperation on energy issues.

Dr. Joyti Parikh was interested in the types of research being conducted to support the program and the applications of the work. Lowry explained that applied research would play an important role in developing an information-based dialogue based on fact for improved energy efficiency in generation, transmission and distribution. Ms. Lowry explained that research institutions would play a critical role in examining Government data for technical clarification and accuracy. The research institutions would serve as a non-biased independent evaluator..

The researchers expressed interest and would welcome participation in future workshops and seminars to be held and offered existing research and literature from their respective facilities.

U.S. Global Change Research Program (USGCRP)

Global Change Research Division, U.S. National Assessment Coordination Office, Intergovernmental Panel on Climate Change U.S. Coordination Office

- Mr. Robert Worrest, Director, Global Change Research Office
- Mr. Michael McCracken, Director, National Assessment Coordination Office
- Mr. Brad Arthur, Program Specialist/Climatologist

Background

The U.S. Global Change Research Program (USGCRP), working with research institutions in the U.S. and beyond, provides the foundation for increasing the skill of predictions of seasonal-to-interannual climate fluctuations (which can bring excessively wet and dry periods) and long-term climate change. The USGCRP was created as a Presidential Initiative in 1989 and formalized in 1990 by the Global Change Research Act of 1990. Since that time, global change research has remained a key science initiative. Continuing to improve scientific understanding of the Earth system is a priority of the National Science and Technology Council's Committee on Environment and Natural Resources. The USGCRP also sponsors research to understand the vulnerabilities to changes in important environmental factors, including changes in climate, ultraviolet (UV) radiation at the Earth's surface, and land cover.

Meeting Notes

Dr. Anand Patwardhan was interested in the evolution and development of the assessment process. All of the researchers agreed that the U.S. National Assessment is a critical need as climate science is developing rapidly and scientists are increasingly able to project some changes at the regional scale by identifying regional vulnerabilities and assessing potential regional impacts. Dr. Kirit Parikh explained that science increasingly indicates that the Earth's climate has changed in the past and continues to change, and that even greater climate change is very likely in the 21st century. Mr. McCracken agreed and felt that this Assessment has begun a national process of research, analysis, and dialogue about the coming changes in climate, their impacts, and what Americans can do to adapt to an uncertain and continuously changing climate.

The group discussed the key findings on climatic vulnerabilities throughout the US and specific regions. The researchers learned how the Program prioritized areas of scientific uncertainty as a basis for structuring the Assessment. Dr. Amit Garg appreciated the candor of the USGCRP representatives in explaining the politically sensitive issues involved in the process. Mr. McCracken explained that the findings of the assessment would serve as the foundation for congressional committees deliberations on required environmental legislation. The findings could conceivably have a large impact on a specific sector or region, which is why the participatory process was stressed as exceedingly valuable.

Mr. Sundt led the researchers through a diagram to provide a hands-on exercise to illustrate the Assessment process. The Assessment was conducted over a 5-year time frame and was comprised of a large stakeholder community of researchers, decision-makers, environmental managers, and the general public. Through a series of workshops, and public hearings, the major issues were prioritized and provided the foundation for stimulating new scientific research in vulnerable areas. Dr. Jyoti Parikh and Dr. Anand Patwardhan expressed interest in designing an Assessment pilot process for India with a focus on one region or state. Mr. McCracken suggested to the researchers that it will be important to establish assessment boundaries, and if the assessment is a pilot to analyze possibly two thematic areas.

The researchers were interested in understanding how the Assessment model could be designed for the Indian scenario. Michael McCracken explained the three prevailing questions that would need to be addressed by the researchers:

- How people and their surroundings are affected by climate variability
- How individuals and communities can take advantage of opportunities and reduce vulnerabilities
- What additional information and research is needed to improve decision-making related to impacts from climate variability and change.

The researchers expressed interest in continuing discussions with the program as their findings and research can prove extremely valuable for the Indian context.

Break-out Session

- Nicholas Sundt, the Information Officer for the Program, met with specific researchers to provide an overview of the multi-media tools utilized to engage policymakers of a rather complex set of issues.
- Dr. Anand Patwardhan and Mr. Michael McCracken met to discuss Anand's work conducted on Vulnerability and Adaptation.

Institute for International Energy Conservation / Civil Engineering Research Foundation (IIEC/CERF)

- William Kirksey, Vice President
- Denise Knight, Director, Asia Operations

Background

CERF's Research and International Programs Division has completed a number of in-depth evaluations of energy efficiency, specific technologies and their applications that are relevant to the building design and construction industry. A CERF-led team of experts representing a range of viewpoints and disciplines typically develops assessments and benchmarks, identifying and prioritizing research needs and establishing R&D agendas for specific technologies and applications.

Meeting Notes

Mr. Will Kirksey discussed with the group an innovative program linking research and technology transfer to meet the growing needs of communities. The Partnership for the Advancement of Infrastructure and its Renewal (PAIR) is an ongoing initiative with the potential to affect a broad cross-section of infrastructure-related issues and concerns. PAIR's goal is to accelerate innovation in the construction, repair and maintenance of US infrastructure. Much of the effort will focus on addressing non-technical barriers that slow the pace of innovation and discourage industry from commercializing promising technologies that can contribute to GHG mitigation. PAIR provides a forum that can effectively focus on key economic, technical, and political issues that encourage or impede the successful commercialization of promising new products or processes.

The researchers discussed as a group that the PAIR model could create an opportunity for Indian industry leaders, public officials, academic researchers, and public interest groups to develop partnerships needed to accomplish breakthroughs in innovations for infrastructure products and processes. The researchers discussed and brainstormed a framework that could be used to develop R&D agendas, creating new opportunities for collaborative R&D partnerships and providing participants with access to pertinent R&D developments outside their own area of interest.

Mr. Kirksey noted that the model can provide increased market opportunities and develop partnerships that promise significant technological advances for revitalization of the infrastructure in a manner that contributes to GHG mitigation strategies of mitigation demands.

Breakout Sessions

- Mr. Will Kirksey and Dr. Jyoti Parikh: Met to discuss U.S. case studies and best practices of firms in supporting green building materials and construction.

Thursday, May 10 – Sunday, May 13, 2001

The Study tour was designed to provide the Indian researchers exposure to U.S. expertise, sources of technical information on their respective research topics and networks of U.S. experts who can provide support to the researchers. Aside from the meetings listed above, there were several "one-on-one" meetings that were arranged for researchers. These meetings provided the researchers an opportunity to further interact with leading US researchers conducting research in their relevant field or area of expertise.

"One-on-One" Research Meetings:

- i) Jyoti Parikh – Mr. John Benemann, Institute of Environmental Management
- ii) Dr. Anand Patwardhan – Mr. Michael Toman, Resources for the Future
- iii) Dr. Dilip Ahuja – Global Environment Facility Secretariat
- iv) Amit Garg – Dr. Dick Bratcher, EPRI
- v) Dr. Jyoti Parikh – Madeline Castanza, IIEC/CERF
- vi) Dr. Kirit Parikh – John Virdin, WRI
- vii) Manoj Panda – Kevin Baumert

Monday, May 14-15, 2001

The Louis Berger Group, Inc. – World Resources Institute
U.S. Research Forum, sponsored by the GEP-CCS Program

- | | | |
|--------------------------|------------------------|--------------------------------------|
| <input type="checkbox"/> | Ms. Julie Haines | The Louis Berger Group, Inc. |
| <input type="checkbox"/> | Mr. Ron Sisseem | The Louis Berger Group, Inc. |
| <input type="checkbox"/> | Mr. Ted Yoder | The Louis Berger Group, Inc. |
| <input type="checkbox"/> | Mr. Erik Brejla | The Louis Berger Group, Inc. |
| <input type="checkbox"/> | Ms. Lori Hatton | The Louis Berger Group, Inc. |
| <input type="checkbox"/> | Mr. Anthony Janetos | World Resources Institute |
| <input type="checkbox"/> | Ms. Ruchi Bhandari | World Resources Institute |
| <input type="checkbox"/> | Mr. Ned Hoyt | Econergy International Corporation |
| <input type="checkbox"/> | Mr. Phil Doyle | Econergy International Corporation |
| <input type="checkbox"/> | Mr. Jeremy Hagger | USAID/USAEP Secretariat |
| <input type="checkbox"/> | Ms. Judith Barry | USAID/USAEP – Energy Programs |
| <input type="checkbox"/> | Mr. Michael Toman | Resources for the Future |
| <input type="checkbox"/> | Mr. Jim Boyd | Resources for the Future |
| <input type="checkbox"/> | Ms. Gurmeeta Vasudeva | TERI – Washington D.C. |
| <input type="checkbox"/> | Ms. Shalini Ramanathan | National Renewable Energy Laboratory |
| <input type="checkbox"/> | Ms. Cindy Lowry | USAID – Bureau of Global Programs |
| <input type="checkbox"/> | Ms. Virginia Gorsevski | USAID – Bureau of Global Programs |

On May 14 -15, 2001 The Louis Berger Group, Inc. *Greenhouse Gas Pollution Prevention Project – Climate Change Supplement*, in association with the World Resources Institute – Climate, Energy and Pollution Programs, held a U.S. Research Forum at the WRI "Zero Emissions" facilities. This event was conducted as part of LBG/GEP's continuing implementation of the GEP-CCS project, particularly the project's targeted research component. The purpose of this component is to produce a set of framing papers on key climate change issues in India. The U.S. Forum is the follow-up to an Indian Research Forum held in India in January 2001. Taken together, the two Forums are intended to define key research issues in climate change in India and to develop teams of U.S./Indian researchers who together, would work to produce high impact research results.

The U.S. Forum was attended by two sets of researchers. The first was composed of six Indian researchers who, as part of the Indian Forum, were identified as lead authors on the main research topics defined at that Forum. The leader of the Indian delegation was Dr. Jyoti Parikh, Indira Gandhi Institute for Development Research (IGDR). The second set was comprised of U.S. researchers. These researchers were selected by LBG using input from the Indian researchers where possible. The U.S. researchers belong to organizations or institutions recognized for their leading technical or research strengths in the climate change topics on which the research framing papers are focused. WRI was selected as the host of the event due to the institution's internationally recognized work in climate change research. LBG/GEP designed the Forum agenda in consultation with WRI to achieve several key outcomes: maximum interaction between Indian and U.S. researchers, understanding between U.S and Indian researchers of value added that each team member could provide for the research effort, and development of an action plan by each team that sets the framework for cooperation to produce the framing papers. These outcomes were achieved and culminated with research partners solidifying their collaboration through cooperative preparation of research action plans. LBG then closed the Forum by defining target milestones for completing draft framing papers and for subsequent peer review and final paper preparation and production.

VII. FOLLOW-UP AND NEXT STEPS "Monitoring Outcomes for Continued Success"

Follow-up

The study tour provided the Indian researchers exposure to a series of research models to enrich their technical foundations. The U.S. institutions and individual researchers will serve as informal networks for the Indian researchers while conducting the research under the GEP-CCS project. LBG will continue to coordinate with the visited U.S. institutions to follow-up on potential areas of collaboration and to gather additional information for the participants. Below, are specific areas for follow-up:

- **WRI** – All the researchers will be subscribed to the WRI climate change related websites of Safeclimate.com, earthtrends.com, climatenet.com. Obtain a full series of the WRI "Climate Notes" for researchers.
- **US Global Change Research Program** – Provide organization chart illustrating the roles and responsibilities of the various U.S. Assessment stakeholders. Obtain information on the regional assessment workshops and their outcomes. Gather additional copies of the Climate Change and the Impacts on the U.S. document.
- **USAID** – Provide additional information to Dr. Jyoti Parikh on SARI program research initiatives on energy transmission and distribution.

Next Steps

LBG/GEP will conduct a thorough follow-up and review process with the study tour participants to monitor the results and impacts of the visit to the U.S.

July 1, 2001

The policy exchange participants will submit to LBG/GEP a trip report from the visit. The report will include ideas for integrating models showcased during visit into the defined research established at the U.S. Research Forum.

November 15, 2001

LBG/GEP Chief of Party will contact study tour participants to discuss those relevant themes and/or contacts of the study tour that were incorporated into the research papers. LBG/GEP will ask the participants to provide a list of U.S. institutions that were met or contacted on the tour that they would like to have access to review the research papers.

February 1, 2002

LBG/GEP will provide to the participants a working paper that outlines the anticipated approach for launching the research paper. The outline will clearly illustrate those key themes identified during the study tour and will recommend potential further dialogue with US institutions. The working paper will also recommend additional initiatives outside the scope of the GEP-CCS project that should be undertaken by the researchers.

APPENDIX I.
CONTACT INFORMATION

<p>Mr. Brad Arthur Program Specialist/ Climatologist Secretariat to the International Research Program Coordination Office of the USGCRP UCAR/NSF 400 Virginia Avenue SW, Suite 750 Washington, DC 20024 USA Tel: 202-314-2232 Fax: 202-488-8681 Email: barthur@usgcrp.gov</p>	<p>Mr. Michael C. MacCracken, Ph.D. Director, National Assessment Coordination Office of the U.S. Global Change Research <i>Suite 750 400 Virginia Avenue, S.W.</i> Washington, D.C. 20024 Tel: 202-488-8630 Voice: 202-314-2233 Fax: 202-488-8678 Email: mnacccrac@usgcrp.gov</p>
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Emerging Climate Change Research and Policy Study Tour

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**INTEGRATED TRANSPORTATION PLANNING, MANAGEMENT AND
TECHNOLOGY POLICY EXCHANGE**

Denver, Colorado • Portland, Oregon • Washington, D.C.

October 15-22, 2001

I. GOAL

In support of the ongoing transportation work under the GEP-CCS Project, LBG designed a policy exchange visit for several key City of Hyderabad, and State of Andhra Pradesh officials to the U.S. The goal of the exchange was to provide the officials a better understanding of integrated land use and transportation planning processes and the linkages between transportation planning and economic development and environmental management including climate change. The policy exchange also examined approaches for multi-jurisdictional/multi-stakeholder participation in transportation planning.

II. OBJECTIVE

The objective of the policy exchange was broader than the focus of LBG's technical assistance activities in transportation. However, the City of Hyderabad and the State of Andhra Pradesh are progressive in terms of their interest in pursuing more advanced forms of transportation planning. LBG wants to help reinforce this interest as it too is linked to the goal of reducing GHG emissions from vehicles. The policy exchange will also help create momentum to support the implementation of the demonstration project on reducing emissions from vehicles including greenhouse gases, that is now in process in Hyderabad.

III. LINKAGES TO THE GEP-CCS PROGRAM

The GEP-CCS technical assistance being provided to Hyderabad for demonstrating interventions for reducing GHGs from vehicles is informing its development of an integrated transportation plan. Therefore, the city's and the state's exposure to more advanced forms of integrated transportation planning could very strongly inform this process, making it more effective, efficient and cost effective. The city is interested in becoming more familiar with the following components of transportation planning as a basis for moving forward. In support of these expressed interest, the following models were showcased to supplement their needs:

- Models of integrated transportation planning
- Role of land use planning in transportation planning
- Role of environmental planning in transportation planning, including variables related to emissions reductions and climate change
- Transportation policy design
- Innovative transportation finance mechanisms
- Public-private partnerships in transportation planning, finance and project implementation
- Vehicle technologies, traffic management and demand management interventions that may be appropriate in an Indian context

As all affects of the factors improved transportation systems as a mechanism for reduced GHG emissions, the policy exchange was designed to address each of these needs, with a linkage to climate change.

IV. STUDY TOUR PARTICIPANTS

- **Dr. P.K. Mohanty, I.A.S.**
Commissioner and Special Officer, Municipal Corporation of Hyderabad

- **Mr. A.K. Goyal, I.A.S.**
*Principal Secretary to Government, Municipal Administration and Urban Development
State of Andhra Pradesh*

- **Mr. P. Ranadhir Reddy, IRTS**
Additional Commissioner (T&T) & Project Director (MRTS)

V. POLICY EXCHANGE SCHEDULE

Denver, CO

Monday, October 15, 2001

- *City/County of Denver - Office of Public Works and Transportation Planning*
- *Regional Transportation District - Office of Planning and Development*
- *Downtown Denver Partnership - Denver Transportation Management Association*

Tuesday, October 16, 2001

- *Denver Environmental Protection Division - Transportation and Environment Programs and the Denver Clean Cities Program*
- *Trans Teq - Manufacturer of CNG Hybrid Electric Buses*
- *Denver Regional Council of Governments - Designated Metropolitan Planning Agency*

Wednesday, October 17, 2001

- *City of Englewood - Office of Transportation Planning and Community Development*
- *Transit Alliance - Transportation Outreach and Awareness*

PORTLAND, OR

Thursday, October 18, 2001

- *City of Portland-Office of Transportation Planning - Policy Planning Division*
- *Metro - Designated Portland Metropolitan Planning Agency*

Friday, October 19, 2001

- *Transportation and Growth Management Office - Oregon Department of Transportation and Land Use Conversation Program*

WASHINGTON D.C.

Monday, October 22, 2001

- *The Louis Berger Group, Inc. - Global Environment Team*
- *United States Asia Environmental Partnership - Office of the Secretariat*
- *National Renewable Energy Laboratories/U.S. EPA - Office of Atmospheric Affairs*

VI. OVERVIEW OF MEETING SCHEDULE

DENVER, COLORADO

OCTOBER 15-17, 2001

Monday, October 15, 2001

City and County of Denver

Department of Public Works – Transportation Division

- Mr. Terry Rosapep, Deputy Director of Planning Programs
- Mr. Bill Sirois, Program Manager

Background

The general role of the Transportation Division of Public Works is to plan, develop, and manage the City's roadway, bicycle and pedestrian network, and publicly controlled automobile parking facilities. The overall goal of the Division is to provide improved mobility within Denver, safely and effectively, in a manner consistent with other related policies and goals of the City, which include the Denver Comprehensive Plan. The functions of the Division include planning and policy development, coordination with other Agencies, project design and development, project implementation, and transportation system management.

The Division is organized into several areas, which include Transportation Planning, Transportation Engineering, the City Engineer's Office, Traffic Operations, the SignShop, Parking Management, and Street Lighting. Each section is headed by a Director who reports to the Deputy Manager of Transportation for Public Works.

The Transportation Planning Section formulates multi-modal policies, programs, and plans for the City's transportation system; participates with other City, State, and Federal agencies in transportation planning initiatives; and coordinates the development of the City's Capital Improvement Program (CIP) and the Region's Transportation Improvement Program (TIP).

Meeting Notes

Mr. Goyal commenced the meeting, explaining that the City of Hyderabad and the State of Andhra Pradesh have been discussing how they can devise a growth management strategy, to address the rapid growth that has occurred in the region over the past five years. Mr. Goyal was interested in how the City of Denver has managed growth issues and what policy interventions have been introduced to accommodate growth.

Terry Rosapep discussed the overall City of Denver strategy of integrating transportation planning measures while managing growth. It was described that the management strategy has changed significantly from the early 80's of developing mechanisms and approaches to lure people to the downtown corridor, which was then a struggling and stagnant economic base for the city. Today, the city is continuing these interventions but now encouraging systematic development and promoting alternatives means of transportation, such as Light rail, to ensure a controlled mobility and growth. Mr. Reddy was interested in the impact of the Light Rail system on the downtown corridor and measures initiated to alleviate congestion. Bill Sirois, noted that the city has established an inter-city agreement to ensure coordination in the timing of signals as a

primary preventive measure against potential gridlock. Aside from signaling, they have not been confronted with any serious issues to date.

In regard to identifying the city's criteria for projecting and directing future growth, Bill Sirois discussed how the city has established an Independent Council Board. Through a consensus process, the board identifies areas for growth and has the ability to designate areas as a special "urban growth district". The special district classification allows for a greater percentage of residential and commercial taxes to be redirected back to the defined area for capital transportation infrastructure projects. Mr. Goyal was interested in the prospect of utilizing this type of zoning measure to require private investors to pay premiums for development in profitable regions. The premium could be based upon a percentage of the density.

Dr. Mohanty and Mr. Reddy discussed how the city could collaborate with the state and introduce measures to provide a percentage of taxes/revenues to be allocated for transportation project financing and to strengthen the City's redevelopment project, the Slum Improvement Program (SIP). They explained the SIP has a mandate to explore the enhancement of physical infrastructure like housing, roads, electricity, drainage, and drinking water.

It was further explained that Denver has the ability, in the targeted new growth areas, to evaluate zoning ordinances and rezone and provide less entitlement to ensure stability of a mixed used area is maintained.

The City's new growth strategy has been designed in collaboration with the Regional Transportation District's (RTD) new Fast Tracks Program (FTP). The FTP is the multi-modal 20-year vision for the city that will be brought to a ballot vote for approval within two years.

Dr. Mohanty was particularly interested in the financial structuring of transportation projects. As Mr. Goyal explained, for Hyderabad, the State is responsible for providing resources for capital expenditures for Hyderabad. Mr. Rosapep explained that projects are funded primarily through a sales tax mechanism of .04 for every dollar to pay for only capital expenses. The City of Denver requires a "use tax" mechanism on new development within the city. The tax requires contractors that are developing new projects in the city to purchase goods and services within the city confines. If they do not, the city places a city tax on the items, outside the city.

Dr. Mohanty and Mr. Reddy were very interested in the process of collecting this type of "use" tax. Mr. Goyal felt that the additional revenue streams generated by the City's would be appealing from the State Gov't level as it would be viewed as an in-kind support for large infrastructure projects. Mr. Sirois described the process of collection, as the contractor/developer will be provided a tax code at the inception of the project and issuing of building permits. The tax code is then provided to the sales representatives at the point of sale, as required by state law. The tax revenues are then diverted back to the city.

Regional Transportation District (RTD)
Office of Planning and Development

- Mr. Bill Van Meter, Senior Manager of Systems Planning
- Mr. Kent Epperson, Senior Transportation Planner
- Mr. Mike Turner, Manager, Corridor Planning and Community Involvement

Background

Regional Transportation District (RTD), a regional authority to plan and build a public transportation system for the six county (and part of a seventh) area whose center is Denver, Colorado.

Through the years, RTD has refined its original vision for rapid transit development by conducting numerous other studies that reflect changes in the region's land use, growth of population and locations of employment centers. The benefits associated with rapid transit such as increased mobility, reduced air pollution, and less congestion have been examined and documented thoroughly in each study

RTD's study of rapid transit corridors, modes, and financing options has resulted in significant progress. In September 1994, the Downtown Express/High Occupancy Vehicle (HOV) lanes were opened to buses and to car pools a year later. In October 1994, RTD opened the Central Corridor Light Rail System, the region's first experience with light rail technology. These projects are first steps by RTD to provide quick and reliable rapid transit alternatives to its many customers.

Finally, the RTD is currently involved in three concurrent Major Investment Studies (MIS). Over the next eighteen months, the RTD along with the Colorado Department of Transportation and the Denver Regional Council of Governments will explore a variety of transportation options for three major corridors in the metropolitan area. The three agencies' policy boards will then select which of the three corridors will proceed forward for eventual implementation as the region's next priority corridor. These efforts will position RTD to offer viable alternatives to the automobile as the public's primary mode of transportation.

Meeting Notes

RTD provided the delegation with an overview of the financial structuring of the RTD programs. Although RTD is a private operating and transit authority, they are provided a .06 sales tax of every dollar as the main source of funding. The delegates were impressed with the large operating area of RTD, close to 2,400sq/miles, and recognized that subsidies were critical to ensure long term operating and planning growth. RTD explained that due to the utilization of public funds it therefore requires a ballot vote for all major transportation projects. The ballot measure has demanded that RTD have a significant community involvement and awareness process so that constituents feel comfortable with new transport measures being taken.

Mr. Reddy was interested in the organization and division of planning responsibilities within the organization. Mr. Van Meter explained that RTD conducts all planning and operates 70% of the vehicles within the fleet system. By Colorado statute, at least 30% of services are outsourced to companies that provide a cost effective model. RTD conducts an analysis and determines those least, cost-effective routes, which are thereafter outsourced through a tendering process.

We discussed at length the evolution of the RTD designed 16th Street Mall corridor, for which the participants were interested in understanding the planning process. The 16th Street Mall, when originated in the early 80's, opened with much skepticism for manipulating the downtown corridor system. The Mall today serves the earliest and is now most successful model of bus rapid transit. The innovation of the dedicated bus lane has helped improve service in the Central Business District and has alleviated downtown traffic and pedestrian congestion.

Mr. Reddy was surprised to understand that the Mall design and plan had eliminated the use of over 300 buses from the downtown area during peak hours. It was explained that the mall

corridor was designed to provide two bus hubs at each end that serve as filter stations to the respective sides of the city

The participants were impressed with the Mall design, as a model function of transit oriented development, linking transportation and land use. Mr. Reddy explained that the model provides an identified area, corridor to focus economic development, and a steady source of income for the city. Furthermore, Mr. Van Meter mentioned that Denver had been in non-attainment on Air Quality measures, the project helped to reduce the average bus route by 2-3 miles and created a 20% reduction in emissions.

The representatives provided a thorough overview of the FAST TRACKS program that will improve rapid transit, expand Park N Rides and enhance pedestrian and bicycle access to transit stations. The program is currently in the process of an extensive public outreach phase to ensure support for the 20-year program.

Mr. Goyal felt that this type of integrated plan was absolutely necessary to ensure a long-term development strategy for the state and for the respective municipalities transportation planning process. Dr. Mohanty envisioned that the Municipal Corporation could develop a multi-modal approach and felt that the city would need to develop a permanent steering committee to successfully implement such a diverse plan.

Mr. Reddy was curious of the evolution of the FAST TRACKS plan and if a systematic process was followed that could be replicated. Mr. Van Meter summarized the development process, which can be categorized in following steps, including:

- i) Major Investment Study
- ii) Public Involvement Process
- iii) Identify Cost
- iv) Environmental Impact Assessment

Dr. Mohanty and Mr. Reddy felt that incorporating a Major Investment Study and/or process would strengthen the existing State criteria for allocating funds for capital infrastructure projects.

We took a tour of the recently purchased Union Station that will under-go extensive renovation to serve as the core of a new multi-modal transport plan. Travelers in the future will be able to use the centrally located facility for local, regional and nationwide trips. The Station will provide travelers an option of accessing the Light Rail, Amtrak and Greyhound lines from the facility. RTD explained that the Union Station terminal would become the new hub for transportation in the downtown corridor.

The delegates were very impressed by the Union Station model and believe that this type of concentrated development should be applied to two existing stations in Hyderabad. The model could serve as the hub for the new corridor development in Cyberabad. Mr. Goyal felt that with the new development in the region that it would be critical to provide a multi-modal design to ensure mobility in the region.

Downtown Denver Partnership
Transportation Management Programs

- Mr. Brendon Herrington, Transportation Program Manager

Background

A program of Downtown Denver Partnership, Inc., the Downtown TMA an NGO created in 1995, is designed to develop and implement cost effective transportation and parking policies and employer initiatives that maintain Downtown Denver as the hub of the regional transportation system, ensuring that work plans continue to develop cost effective, creative solutions to mobility, access, parking and air quality concerns for Downtown constituents

The Downtown Denver Transportation Management Association (DDTMA) was established by in 1995, in response to growing concerns among downtown businesses and downtown visitors on issues relating to air quality, mobility and access into and around downtown. The Downtown TMA was designed to develop and implement cost effective programs that will improve access, mobility and parking options for Downtown constituents, at the same time reducing traffic congestion and protecting air quality.

Meeting Notes

Bill Herrington provided an overview of the TMA' activities. The group was interested in the impacts of parking structures and how they provide a role in congestion. The Partnership has played a critical role in designing new pay scales and electronic payment devices, which provide a more appealing parking system. The city subsidizes a specific number of spaces per month to provide parking for lower income families.

Mr. Goyal was very interested in the role the NGO plays in the planning process, by leveraging its membership to advocate enhanced transport measures. The Partnership was particularly influential in the design of the light rail system through downtown. Mr. Reddy added that the placement of the Light Rail System would develop a new economic corridor within the city and/or spur revitalization, as the 16th Street Mall had done.

The Partnership has recently leveraged its large business membership and worked with the City of Denver and the regional council of governments in reevaluating the transportation planning aspects of the expansion of the new convention center. The original plans would have resulted in major gridlock and congestions during peak hours during the weekdays. The revised plan calls for rezoning and provision of retail sales space in the expanded convention center, to ensure mobility through the lower downtown area.

The Partnership discussed a number of models employed to reduce traffic flow into the city:

- Light Rail Awareness campaign
- Organize van/car pools for areas businesses
- Encourage flextime for relevant professions

The Partnership currently provides market research on transportation alternatives (car-share, carpool), office availability, vacancy and parking spaces within the defined downtown corridor. An Indian NGO could provide these services and serve as an information resource for new foreign direct investment in the region. Mr. Goyal felt that the NGO should expand its services beyond research, and also serve as a coordinating agency for a Business Improvement District (BID) similar to the BID in Denver, managed by the Partnership. Mr. Reddy and Dr. Mohanty discussed that the role the Partnership provides in transportation planning could be led by an

influential NGO in Hyderabad, possibly EPICI. They added that the NGO could provide similar services, particularly in new growth areas or in Cyberabad.

Tuesday, October 16, 2001

Clean Cities Denver Program

Implemented by the City of Denver
Department of Environmental Protection

- Ms. Deborah Kielian, Clean Cities Coordinator/Denver

Background

The Clean Cities Program, sponsored by the U.S. Department of Energy, supports public-private partnerships that deploy alternative fuel vehicles (AFVs) and build supporting infrastructure. By encouraging AFV use, the Clean Cities Program helps enhance energy security and environmental quality at both the national and local levels. Unlike traditional command-and-control programs, the Clean Cities Program takes a unique, voluntary approach to AFV development, working with coalitions of local stakeholders to help develop the AFV industry and integrate this development into larger planning processes

The Denver "Take Charge" program was implemented to provide three neighborhood electric vehicles (NEVs) for use by city of Denver employees for city business downtown. The vehicles have a global positioning system to monitor their locations and state of battery charge, and the vehicles are eligible for free parking downtown.

In 1998, Denver was the site for the first nationally recognized "Clean Cities Used Alternative Fuel Vehicle Sale." In this sale, used propane, ethanol, and compressed natural gas (CNG) vehicles were offered for auction, with a new category of AFVs offered to fleet managers.

Denver Clean Cities has been supporting legislation related to alternative fuels at the state and local levels. At the state level, three bills were passed in 1998: HB 98-1169, to provide an income tax credit for alternative fuel refueling facilities and to create a rebate program for government and tax-exempt entities; SB 98-030, to authorize ILEV AFVs to use high occupancy vehicle (HOV) lanes regardless of the number of occupants; and SB 98-1081, to require the Motor Vehicle Division to collect and provide reports on registration of fleets with 10 or more vehicles and on an expanded list of fuels, including natural gas, methanol, ethanol, biodiesel, electric, and propane, in addition to gasoline and diesel. At the local level, legislation was passed to allow neighborhood electric vehicles to operate on city streets.

Clean Cities Denver tour included two site visits:

i) Highland Village Redevelopment
Neighborhood Electric Car-Sharing Program

- Mr. Kevin Nichols, Car Share Coordinator, Burgwyn Perry and Rose
- Mr. Jake Wedgemen, Land use Planner, Burgwyn Perry and Rose

The Highland Garden Village complex is an urban redevelopment and renewal project on the grounds of the former Elitch Gardens amusement park that was relocated in 1994. The

redevelopment will create a healthy, vibrant, community that will encourage a mix use development. The participants were extremely interested in blended land-use. It was discussed that the transportation planning aspects of the redevelopment with focus on sidewalks, pathways and alleys, were designed like country lanes to encourage walking and biking. Mr. Goyal felt that these types of planning interventions could also be introduced along main arterial roads in Hyderabad. Mr. Reddy pointed out that in Hyderabad that there are not sufficient walkways or bike paths that would help alleviate congestion in certain areas.

The redevelopment and design of the community have been recognized as a model for integrated transportation management measures by narrowing roads and timing signaling. Cars will be accommodated, but parking lots will not dominate the landscape. The developer, in association with the Clean Cities Denver program, has introduced a car-sharing program for the community. Through an USDOE grant, the community will own and operate five Toyota RAV 4 vehicles. The vehicles will be used primarily by licensed residents for short-trip and around the city adventures.

Dr. Mohanty was interested in how the community and/or project identified the Toyota RAV-4 as the appropriate technology for the new development. Mr. Wedgeman explained that the two main drivers for the selection were the simple design and durability. The five car-share vehicles operate on a simply charging system and maintain a 14-hour charge and/or a 60-mile driving radius. The charging systems were very inexpensive and are adaptable to a regular home electrical system. Mr. Goyal felt that the vehicles supported the design of the community and would provide a secondary vehicle source for those families who that might have considered purchasing a second car.

The car share program was discussed as a model for areas of low volume, but frequent trips. Mr. Reddy proposed that this type of car-share model with electric vehicles, or an appropriate vehicular technology, could be demonstrated through a pilot, via a greening of municipal fleets approach. The vehicles are ideal for municipal travel due to short-range trips, and intermittent weekly use.

ii) Transportation Techniques, LLC (TransTeq)

Manufacturer of CNG Hybrid Electric Buses

- Mr. Dale Hille, President
- Mr. Paul Szilagyi, Chief Executive Officer

Background

TransTeq is an entrepreneurial, Colorado based company, that designs and manufacturers leading advanced technology hybrid electric vehicles. The "EcoMark" bus is a CNG fueled Hybrid electric bus with a 116 passenger capacity. The "EcoMarks" are currently operated by the Denver Regional Transportation District (RTD) on the downtown Denver 16th Street Mall – bus rapid transit model. The fleet of 36 buses is claimed to be the largest full-size hybrid electric (HEV) bus fleet anywhere. It operates a route that averages 50,000 passengers per day. It is regarded as the backbone to the RTD system connecting light rail and bus networks downtown. The design is highly acclaimed

Meetings Notes

The Trans Teq Company has a unique and extraordinarily short history. The period between the time RTD released its initial tender to date the CNG Electric Hybrid Buses were launched on the 16th Street mall was less than 2 years. The TransTeq Ecomark brand was designed envisioning future next generation technologies and is built to equip a fueling source compatible and based on

the needs of the client. The participants were keen to this type of flexible design, as buses can then be consistently retrofitted to future fuel and vehicular generation means.

The group discussed at length the comparisons of a standard diesel bus to a CNG Hybrid electric manufactured by TransTeq. The TransTeq vehicle provides a recovery of cost over a 12-year timeframe through lower operating, fuel and infrastructure costs.

The participants were skeptical of CNG, but were interested in exploring LPG for the Indian scenario. The buses currently run on a low emissions system and have capabilities to operate at a zero emissions level. The buses run on a high RPM level that eliminate cold starts and contribute to the reduction in emissions.

The President, Dale Hill, sits on the USDOT FTA Technical Board. He provided a history of bus rapid transit in the U.S. and models developing in Honolulu and Los Angeles. Mr. Hill discussed the economic benefits of BRT, as most cities that have adopted a BRT model have experienced a 50% reduction in operating fleet requirements. Timed signaling has provided a fast, economical way for riders to reach destinations in a timely manner.

Dr. Mohanty felt that an appropriate demo project for Hyderabad would be to integrate a planning approach with a vehicular technology, as done successfully in Denver with the 16th Street Mall design and the TransTeq EcoMark buses lanning and vehicular technology. Dr. Mohanty applauded TransTeq's efforts in designing an adaptable technology for future generations. He noted that in the Indian scenario, retrofitting processes are common, so having a technology that can easily incorporate these measures was an interesting model to explore further.

Denver Regional Council of Governments (DRCOG)

Designated Denver Area Transportation Metropolitan Planning Organization

- Mr. George Scheuernstuhl, Director, Transportation Services
- Mr. Jeffrey H. May, Director, Transportation Planning and Programming

Background

The *Denver Regional Council of Governments*, or *DRCOG*, is a voluntary association of 50 county and municipal governments in the greater Denver, Colorado, area. Through the COG, local governments work together to address issues of regional concern. Those issues include growth and development, transportation, the environment, provision of services to the region's older population, and analysis of economic and development trends. Besides promoting regional cooperation and coordination among local governments, the COG resolves common problems, performs regional planning and provides services to its members.

The DRCOG is designated as the Metropolitan Planning Organization (MPO) for the Denver metropolitan area. This designation means that DRCOG is the lead-planning agency for regional transportation planning. The Transportation Management Area (TMA) encompasses all of Denver, Douglas, and Jefferson counties, as well as significant portions of Boulder, Arapahoe, and Adams counties. It is within the TMA that DRCOG is responsible for programming transportation projects that receive federal transportation funds. In addition to its MPO responsibilities, DRCOG is responsible for preparing a transportation plan for the non-TMA areas of Gilpin and Clear Creek counties and the remainder of Adams and Arapahoe counties.

DRCOG has the responsibility for identifying current and future transportation needs for the Denver, Boulder, and Longmont urbanized areas, and for recommending an integrated, multi-modal metropolitan transportation plan to meet these needs, as well as identifying priorities for implementation. The two major surface transportation documents produced by DRCOG are the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP).

Meeting Notes

DRCOG provided a through overview of the criteria and allocation of federal funds they disburse for transportation related programs. DRCOG's work is focused on supply side planning and all areas within the T M A that are provided appropriate federal road funds. Mr. Reddy was interested in the enforcement and/or legal issues involved with the planning. It was described as DRCOG is a Voluntary organization, it does not hold jurisdictional power to legislate land use and growth issues, which then are ultimately controlled by the local governments. Dr. Mohanty did recognize the use of inter-city agreements could foster integrated planning.

DRCOG described their regional planning efforts related to the new urban growth boundary that has been established. The growth boundary defines the area within which growth of urban densities may be permitted. The participants asked about the growth within city limits. The internal growth has been a sensitive issue, as the MPO can only define a percentage of growth restraint, but cannot identify specific areas in a city that cannot be developed. Mr. Goyal felt that the boundary model could be an interesting method to explore a national-level initiative. Mr. Goyal discussed with the Dr. Mohanty that the model would also serve as a growth strategy across the state of AP. The COG felt that it could be translated to a larger scale, however the downfall would be the difficulties in monitoring. Mr. Reddy explained that the model could be used to examine internal growth and density in the state, but not necessarily as a boundary.

Air quality measures were discussed as a key factor in regional transportation plans. DRCOG described the history of environmental impacts within transportation planning and that the ISTEA act in the early 90's provided the foundation for considering these factors in planning. Mr. Reddy was interested how this impacted the planning process and the role of the MPO. Mr. Scheuernstuhl explained that it had dramatically changed the planning process as transportation planners now had a new entree of issues to consider when planning projects. These measures also impacted the financial structuring of projects as they were required to be fiscally constrained. This measure ensured that municipalities would not recommend large infrastructure and capital-intensive projects that clearly could not be afforded at the time.

The participants examined the air quality modeling used in Denver that has been used to develop a baseline for assessing region's compliance with regional air quality standards regional are to an attainment level.

Wednesday, October 17, 2001

City of Englewood
Office of Public Works and Community Development

- Mr. Gary Sears, City Manager/Mayor
- Mr. Harold Stitt, Senior Transportation Planner
- Mr. Robert Simpson, Community Development Director
- Ms. Lauri Dannemiller, Senior Manager, Community Development Department

Background

The City of Englewood embarked on one of the first national projects to replace an enclosed shopping mall with an open air, mixed used city core. This 55-acre public-private project focuses development on a central public area with walkable streets and rail transit. This "City Center" complex is considered a model transit oriented development supported by land use patterns that promote travel by transit, bicycle, walking and ridesharing. Employment hubs, retail, commercial centers and civic uses in transit centers and along transit corridors are features of the supporting land use plan.

Meeting Notes

We had the privilege to have met with the City of Englewood Mayor/City Manager to discuss the City's new City Center development. Dr. Mohanty felt that the development of the center was an interesting and collaborative model as it had been built in collaboration with the transit authority and is integrated with the new Light Rail system. The Mayor discussed the City's vision of City Center, to build upon the regions investment in light rail to attract new retail commercial services and resident into the inner suburb.

Dr. Mohanty and Mr. Reddy provided the Mayor with an overview of the new Cyberabad development and the proposed designs for a Light Rail system thru the region. Dr. Mohanty felt that this type of model, CityCenter, could be replicated along the proposed rail route in Hyderabad. The development of these "CityCenter's" would address outstanding questions to the zoning of land adjacent to the rail. Mr. Reddy noted that the CityCenter plaza was a mixed-use development of businesses, homes, and commercial. The approach has such created these smaller viable cities that would be linked by rail, a common historical thread for the original Indian railway system.

On the transportation side, the City coordinated with RTD to ensure that the new light rail system would also serve as a regional bus hub, while further developing this center into a multi-modal system. The City Center complex design was created to provide 900 Park N' Ride spaces to encourage light rail travel and use of the commercial business.

The delegation was very interested in the USE Tax and Sales Tax structured to finance all transportation programs. The participants met with the City Director of Finance to discuss the how the use taxes is structured and funneled back to the city for payment. The City requires that a 3.5% tax on all construction materials and is paid by the development firm at the point of issuing the permits for development.

The City Manager encouraged exploration of a sister-city partnership between Englewood and Hyderabad. The two cities agreed that their respective experiences and models in planning could prove to be valuable to each other.

Transit Alliance

- Mr. Lauren Martens, Director

Background

The purpose of the Transit Alliance is to contribute to the economic vitality, the quality of life, and the environment of the Denver metropolitan region by promoting public transit as part of a balanced, multi-modal transportation network.

Traffic congestion is rapidly getting worse and is a top public concern. In order to build agreement on solutions to the problem, extensive studies are being conducted on seven of the most congested highways in the metro area. These Major Investment Studies analyze all available alternatives. The three, which have been completed, recommend rail and bus transit solutions because they are cost-competitive, economically efficient and environmentally beneficial investments. Over the past few years a coalition of elected officials, business groups and environmental and other public interest organizations has come together with the shared goal of implementing planned transit investments, including rapid transit, smaller neighborhood buses and suburb-to-suburb bus service. To help reach this goal, the partners in this coalition have created the non-profit organization Transit Alliance.

Meeting Notes

Mr. Martens provided an overview of the Alliance and the role the NGO plays in leveraging its membership to create support for public-private initiatives. The alliance plays a very important role in Denver as public support is needed, as State law requires all tax increases to go to a ballot for approval. The Alliance membership is comprised of 36 local governments, and through this network is capable of galvanizing community support for transit and transit-oriented development. The diverse network of officials is designed to develop regional support and agreement on strategies for funding transit and advocate for increase investments in regional and local transit. Mr. Reddy noted that the in the State of AP they might consider establishing an independent agency that could play an identical role as the Alliance and act as the coordinating body on designing policies not only on transportation issues, but also on health, and environment. The development of the office could facilitate the planning process of large infrastructure projects in the state, amongst a diverse stakeholder and agency group.

The participants were extremely interested in the magnitude of public outreach and widespread support created by the Alliance for new transportation programs. The group watched a video entitled "Cure for the Rush Hour Blues" for encouraging public support for alternative forms of transportation and for the light rail system.

The Alliance discussed that the advocacy role that they have played has enhanced support for them to play a larger role in the future in working with governments to secure appropriations for large infrastructure projects, target bus expansion and research financing options for future rapid transit corridors.

The participants were interested in the critical role the Alliance plays in gaining public support and envisioned a role an NGO in India could provide to the public. Dr. Mohanty mentioned that although a public vote is not relevant in the Indian scenario, it is critical to ensure support from the constituents to provide a viable model. An NGO could serve as the public outreach forum on advising the public of new transportation projects, schedule changes, construction to be done in the city.

**PORTLAND, OREGON
OCTOBER 18-20, 2001**

Thursday, October 18, 2001

**City of Portland
Office of Transportation - Transportation Planning Division**

- Mr. John Gillam, Policy Section Manager
- Ms. April Bertlensen, Transportation Analyst

Background

The Policy Planning section focuses on the Transportation System Plan (TSP) and assists the City's Bureau of Planning with community and neighborhood land use plans.

The TSP outlines city transportation policy and coordinates the City's investment in pedestrian, bicycle, transit and street improvements over the next 20 years. The TSP is needed to comply with federal, state and regional transportation planning requirements

The TSP also plans for all modes of travel to create a comprehensive transportation system that gives people choices in how they travel and links transportation service to growing areas. Strategies in the TSP address traffic congestion by looking for more efficient ways of growing and expanding travel options. The TSP supports the result in amendments to the Comprehensive Plan and other city and regional regulations and specifies capital improvements needed over the next 20 years. The TSP will be finished within one year of the adoption of the Regional Transportation Plan, which was adopted by the Metro Council on August 10, 2000.

Meeting Notes

The City of Portland works very closely with the regional Metropolitan Planning Organization to create a plan for the city's transportation system that addresses the mobility needs of the growing city. Portland, is unique in that the MPO is designated and holds regional government authority to design and mandate regional transportation plans and establish urban growth boundaries. The MPO helps ensure that projects, investments and infrastructure improvements are in compliance with federal, state and regional planning requirements. The city has a very stringent growth policy that emphasizes on revitalization of the downtown corridor. Dr. Mohanty pointed out that the stringent growth policies could hamper a city the size of Hyderabad. As he explained, if the city were to limit growth to a downtown corridor that it would have major implications for congestion. Mr. Gilliam noted that Portland had been enduring similar issues and has seen the stringent policy serve as a driver for public transportation.

As the MPO in the region holds regional jurisdiction, Mr. Reddy was curious of the roles and responsibilities that fall within the confines of the City. The City discussed its responsibilities for planning as the following:

- Citywide and district transportation policies
- Street Classification policies and maps
- Street master plan
- Modal plans
- 20-year list of transportation projects.

The group was interested in the adoption process of these measures and coordination with relevant agencies. Along with a public involvement process, the State always requires that the plan be coordinated with the major city and regional planning and transportation agencies, cities and resource. Each agency will review for consistency with relevant statues and complementing plans. The plan is updated every five years. Part of the update process includes progress reports on refinements plans an area studies.

The City of Portland has a blended revenue structure and relies heavily on specialized urban regions. These special districts provide an internal tax mechanism, that cycle these funds back to the city for innovative capital improvement projects.

Metro

Designated Portland Area Transportation Metropolitan Planning Organization

- Mr. Tom Kloster, Manager, Senior Program Supervisor, Transportation Division
- Mr. Mark Turnpel, Manager, Manager, Long Range Planning, Planning Division

Background

It's better to plan for growth than ignore it. Planning is Metro's top job. Metro provides a regional forum where cities, counties and citizens can resolve issues related to growth and issues such as protecting streams and open spaces, transportation and land-use choices and increasing the region's recycling efforts. Open spaces, salmon runs and forests don't stop at city limits or county lines. Planning ahead for a healthy environment and stable economy supports livable communities now and protects the nature of our region for the future.

Metro is the directly elected regional government that serves more than 1.3 million residents in Clackamas, Multnomah and Washington counties and the 24 cities in the Portland, Oregon, metropolitan area. Metro's primary mission is to manage growth in this region.

The more this region grows, the more demand is placed on roadways and communities. Metro is recognized nationwide for linking transportation and land-use planning to maintain livability. By working with residents and local and state partners, Metro ensures there are effective transportation options to move people and goods throughout the region. We develop the region's transportation plan and prioritize and allocate federal and state transportation funds

Meeting Notes

The Long Range Planning division provided an overview of the new Urban Growth Boundary that has been established by Metro in the 2040 Metro Vision plan. The plan provides the foundation for securing federal funds for large infrastructure and Capital-intensive projects for the federally required 20-year plan. The 2040 plan is a concept designed to look beyond the required 30-year plan and serve as a mechanism to secure more funds.

Dr. Mohanty pointed out that the Metro 40 year plan seemed to be a unique planning exercise, which has proven successful for lobbying for additional federal funds for transportation improvement projects. Mr. Kolster explained that the success has been attribute to a systematic decision matrix that ensures that local authorities and communities are involved in the decision-making process, our participants were very interested The matrix includes criteria for which Metro can allocate federal funds for road projects. The process ensures maximize coordination and prioritization of projects, that the allocation of federal funds becomes more of a collaborative process. Mr. Reddy added that the coordination process seems to continue to allow municipalities to identify individual transportation needs for each growth concept and to examine the relative importance for regional needs.

Mr. Reddy and Dr. Mohanty were interested in regional transportation policies that were established and how they are developed. Mr. Turnpel explained that the policies, although general in nature, aim to promote integrating land use, environment protection and transportation systems. Dr. Mohanty felt that Hyderabad would need to envision similar policies but focus primarily on ensuring access to more and better choices of travel in the region and also pay special consideration to the special needs of all people, including youth, elderly, disabled.

Metro has recently launched a new program entitled the Boulevards Program. The scope of the program is to assist local planning agencies to link main arterial roads with the urban growth concept. The program will support the Regional Transportation Plan initiatives and will be fully funded, via federal roads funds.

Friday, October 19, 2001

Transportation and Growth Management (TGM) Program a collaboration of Oregon

Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD)

□ Mr. Bill Adams, Region Director

Background

As Oregon continues to grow, the demands of a larger population create potential threats to the state's quality of life: threats such as eroding livability, declining mobility, and rising transportation costs. Without careful planning designed to manage this new growth, these threats could become reality. In order to address these issues, the Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) joined forces in 1992 to integrate transportation planning with the statewide land use planning program to achieve benchmarks for mobility, air quality and community design. The result was the Transportation and Growth Management (TGM) Program, formed after its approval by the 1993 Oregon Legislature. The program is supported by state general funds and federal funds under the Federal Transportation Equity Act for the 21st Century (TEA-21).

Meeting Notes

The innovative program's mission is to enhance Oregon's livability, foster integrated land use and transportation planning and encourage development. These measures result in compact, pedestrian, bicycle, and transit-friendly communities. The TGM program has several tools for fulfilling this mission. The program offers planning Grants to local governments. Grants help local communities plan for streets and land use in a way that creates livable, transportation-efficient communities and makes the best use of state highway infrastructure.

Dr. Mohanty felt that the TGM program served as the assistance mechanism for municipalities to comply and conform to MPO policies and practices. Mr. Reddy envisioned that the program would not only impact communities but also expand public transit service and improve pedestrian access to transit. Dr. Mohanty emphasized that the planning to be done now will determine future transportation needs, identify alternatives to auto-oriented development and keep costs of public facilities in control. Mr. Adams emphasized that Hyderabad will need to always ensure consistency between land-use and transportation planning.

The group discussed the requirements and criteria for grants, which was described for i) local transportation system plans and implementing measures ii) land use plan changes which help

meet transportation improvement needs iii) urban growth management strategies. The management strategies specifically work with municipalities to meet Metro mandates benchmarks on growth and land use.

TGM Quick Response Team consultants provide transportation efficient design alternatives to development proposals. On request, a team helps a community or developer meet Smart Development design objectives. Code Assistance is provided to local governments to prepare or amend development codes for transportation system and lands uses plans, and apply urban growth management tools. The TGM Outreach program is aimed at increasing the understanding and acceptance of smart development principles through things like workshops, a partnership program and technical assistance for practitioners.

The participants expressed interest in the type of technical assistance provided to planning agencies. The group felt that the state of AP should adopt specific measures to provide technical assistance to local governments to prepare and amend transportation and land use plans. A new Indian program could incorporate these new measures to implement new state laws and policies.

WASHINGTON D.C.
OCTOBER 21, 2001

Monday, October 21, 2001

Breakfast Roundtable Discussion

The Louis Berger Group, Inc. / US-AEP-USAID / IIEC-CERF

- Mr. Michel Jichlinksi, Chief Operating Officer, LBG
- Mr. Peter Kimm, Executive Director, USAEP/USAID
- Mr. Cpt. Von Millard, India Country Coordinator, USAEP/USAID
- Mr. Jeremy Hagger, Associate Director-India Coordinator, USAEP/USAID
- Ms. Julie Haines, Vice President, LBG/GET
- Mr. Will Kirskey, IIEC/CERF
- Mr. Ted Yoder, LBG/GET
- Ms. Lori Hatton, LBG/GET

The breakfast roundtable was designed to provide an opportunity for informal discussion on emerging urban and environmental issues in Hyderabad. The group that attended and represented by those institutions currently work and planning on future work in Hyderabad.

The participants were given an overview of the Louis Berger Group, Inc's worldwide transportation work, relevant projects, in India by Michel Jichlinksi, Chief Operating Officer (COO) LBG Worldwide. Mr. Jichlinksi presented two urban transport projects LBG is currently implementing in Ahemedabad and Hanoi, Vietnam. Dr. Mohanty was interested in understanding those lessons learned Ahemedabad has faced during implementation.

Mr. Peter Kimm, USAEP, felt that the Municipal Corporation in Hyderabad could play a larger role in shaping environmental policies by strengthening the City Managers Association. There was discussion that when LBG organizes the demo design workshop in the early 2001, that there is collaboration with US-AEP in hosting a joint event. The workshop could nicely tie those emerging US-AEP urban activities in the region with those transportation plans and activities for GEP-CCS. Dr. Mohanty felt that the CMA could help coordinate demo project implementation. The mission of the CMA, as Dr. Mohanty described, could be modeled after MPO in the Portland area. The CMA could serve as the centralized planning agency for the City.

National Renewable Energy Laboratories / U.S. Environmental Protection Agency

- Ms. Shalini Ramanathan, NREL Project Leader, Environmental Programs
- Mr. Jack Fitzgerald, USEPA, Office of Transportation and Air Quality

NREL and the USEPA are in the design stage of developing a program that will explore the linkages between vehicle emissions and the attributed health and economic impacts. The representatives presented the preliminary design and welcomed ideas for tailoring the program to Hyderabad.

Shalini Ramanathan, NREL, and Jack Fitzgerald, USEPA, provided an overview of the IES model, including a series of worldwide case studies on international IES models. We discussed the criteria for identifying and quantifying the economic, environmental and public health benefits and how they are integrated with the environmental strategies to harmonize air quality protection measures and development objectives. The group expressed that these measures could provide an added value to policymakers in India for developing appropriate strategies to address air pollution and GHG reduction.

Dr. Mohanty suggested that the city should play a role, outside of the Pollution Control Board participation, in conducting public outreach and awareness. It was discussed that the IES program could supplement the GEP Demo. Project, and provide additional elements to the project design. Mr. Reddy noted that the evaluation of health and environmental benefits for new GHG technologies would provide a critical value in justifying the implementation of the new cost effective measures to applicable funding agencies.

VII. Follow-up and Next Steps "Monitoring Outcomes for Continued Success"

Follow-up

The policy exchange provided a series of models and examples that we anticipate will be incorporated into the City of Hyderabad and State of Andhra Pradesh transportation planning process. LBG will continue to coordinate with the visited U.S. institutions to follow-up on potential areas of collaboration and to gather additional information for the participants. Below, are specific areas for follow-up

- **Regional Transportation District** – Collect information on the RTD vs. U.S. Supreme Court case on the use of "Impact" and "Use" tax fees to fund transportation projects.
- **Downtown Denver Partnership** – Gather additional copies of the Denver maps of city and of the 16th Street mall business district.
- **TransTeq, LLC** – Provide Decision matrix for evaluating Diesel vs. CNG Hybrid Electric Buses in terms of standard cost, operating, maintenance, labor.
- **City of Denver/Environmental Protection Division** – Discuss potential financing options for alternative fuel promotion on an international basis.
- **City of Englewood** – Explore opportunities for a transit-oriented "Sister-City" relationship with Hyderabad.
- **Transit Alliance** – Provide additional copies of the "Cure for the Rush Hour Blues" video.
- **Metro** – Provide additional copies of the 2000 Regional Transportation Plan

Next Steps

LBG/GEP will conduct a thorough follow-up and review process with the exchange participants to monitor the results and impacts of the visit to the U.S.

November 10, 2001

The policy exchange participants will submit to LBG/GEP a trip report from the visit. The report will include ideas for integrating models showcased during the tour into the planned demonstration design project.

November 15, 2001

LBG/GEP Chief of Party will travel to Hyderabad to conduct a policy exchange debrief with the participants. The trip report submitted by the participants will serve as the basis for discussion in defining appropriate next steps to move forward. LBG/GEP will follow-up accordingly with US institutions based on additional information requested by participants.

December 15, 2001

LBG/GEP will provide to the participants a working paper that outlines the framework for the demonstration project. The outline will clearly illustrate those key themes identified during the policy exchange and will recommend potential further dialogue with US institutions. The working paper will also recommend additional initiatives outside the scope of the GEP-CCS project that then city should undertake as part of its Vision 2000 program.

January 1, 2001

LBG/GEP Washington will follow-up with the U.S. institutions and gather new articles, publications and regional transportation plans that will be useful to the City's new transportation initiatives.

February 1, 2002

LBG/GEP will follow-up with the participants to explore if new initiatives and/or policies, as a result of the visit have been adopted by the city. LBG/GEP will be able to provide limited assistance in furthering selected initiatives.

APPENDIX I.

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