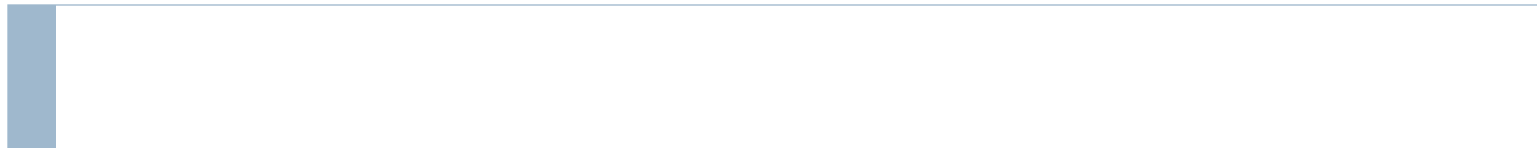
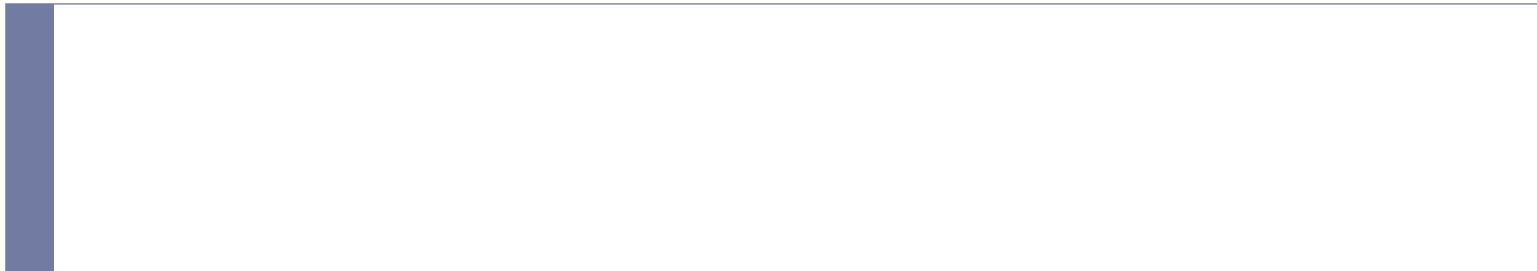


**CENTRE FOR URBAN  
TRANSPORTATION STUDIES (CUTS)**  
(A COE in “Urban Transport” established by MoUD)  
**NIT Warangal**

**Progress Review: 2009-10**



# Objectives

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- ▶ To provide technical assistance to the MoUD, UDAs and MCs
- ▶ To augment the basic infrastructure already created during the previous plan periods in the form of equipment and up gradation of computational facilities.
- ▶ To develop Interaction with global Universities and Research Laboratories in the area of Urban Transportation Planning and Engineering with a view to develop expertise, update technology and improve R&D.
- ▶ To strengthen and enhance research activities in the area of Urban Transportation Planning and Engineering
- ▶ To act as Technology Transfer Centre
- ▶ To exploit the above facilities to
  - ▶ Strengthen teaching and learning process supported by case studies to produce more qualified manpower in Urban Transportation
  - ▶ Organise short term courses/workshops/seminars/conferences to disseminate and share specialist knowledge in Urban Transportation
  - ▶ Develop indigenous software in Highway, Traffic and Transportation Engineering as a step towards self-sufficiency



# Technical assistance to the MoUD, UDAs, & MCs

- In evolving guidelines for DPR preparation of UT/BRTS/MRTS projects and their evaluation
- In evolving and evaluating performance benchmarks for Urban transport
- In preparation of various policies for UT
- In dissemination of Guidelines / Toolkits for UT development
- On any other issue, as requested by the MoUD from time to time



# CUTS – Education Initiatives

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- ▶ The intake of the M.Tech in **Transportation Engineering** has been enhanced to 38 from the academic year 2008-2009.
- ▶ Students admitted: 30 (2008-10); 31 (2009-11); 33 (2010-12)
- ▶ courses Offered:
  - ▶ Urban Transportation Planning; Land use & Regional Transportation Planning; Advanced Travel Demand Modelling; City & Regional Planning
  - ▶ Traffic Analysis & Engineering; Traffic System Design; Advanced Traffic Engineering; Transport Legislation & Road Safety
  - ▶ Mass Transportation System Planning & Management
  - ▶ Transportation System Management; Project Management
  - ▶ RS & GIS; GIS for Transportation
  - ▶ Transport Economics and Project Appraisal; Environmental Impact Assessment



# CUTS – Education Initiatives

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## **Elective courses to be introduced:**

- ▶ Bicycle & Pedestrian Transportation;
- ▶ Intelligent Transportation Systems;
- ▶ Transportation Networks Analysis;
- ▶ Traffic Simulation & Modelling;
- ▶ Environmental Analysis of Transportation Systems
- ▶ Transit Sensitive Land use Design
- ▶ Signal System Optimisation
- ▶ Traffic Calming & Travel Demand Management
- ▶ Parking Analysis, Design & Management



# CUTS – Education Initiatives

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- ▶ One year **PG diploma** course on **Urban Transportation** is contemplated for the practicing transportation professionals (preferably working in UDAs) with an annual intake of 10.
- ▶ Emphasis on Case Studies & On hand practices with Software packages



# CUTS – Capacity Building Initiatives

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## **Training Programs**

- ▶ Minimum of 10 short term training programs @ 2 per annum with an intake of 50 per program will be organised (Total participants expected to be trained are 500).
- ▶ The following are the tentative list of suggested topics:

- ▶ Traffic Measurement and Analysis
- ▶ Urban Travel Demand Modelling and Management
- ▶ Land use – Transportation Planning
- ▶ Highway Capacity Analysis
- ▶ Transportation System Management
- ▶ Traffic Regulation and Management
- ▶ Facility Design, Operation & Management
- ▶ Parking Analysis, Design & Management
- ▶ Environmental Impacts of Urban Transportation
- ▶ Demonstration of Software for Transportation Demand Modelling, System Design and Management

STTPs on “Safety Guidelines for Planning, Design and Maintenance of Urban Streets”, “Traffic Regulation & Management” and “Urban Transportation Planning” will be organised during 2010-11.



# CUTS – Capacity Building Initiatives

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## **Workshops**

- ▶ Two workshops on Urban Transportation Practices will be organised  
**(one in second year i.e. 2010-11 and second in fourth year, i.e. 2012-13).**
- ▶ Two days stake holders' workshop on “Urban Transportation” was organized on 26<sup>th</sup> & 27<sup>th</sup> February 2010 in association with PTV Vision, Germany.

## **Seminars**

- ▶ Two Seminars on Urban Transportation will be organised  
**(one in Third year, i.e. 2011-12 and second in fifth year, i.e. 2013-14).**



# CUTS – Applied Research Areas

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- ▶ A strategy for improving Mass Transit Patronage
- ▶ Modeling Urban growth; Land use-Transportation Integration
- ▶ Development of Capacity Analysis for Urban Streets
- ▶ GIS based Traffic & Road Safety Management System
- ▶ Modeling & Mapping Environmental Pollution



# CUTS – Research Initiatives

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## ▶ **Doctoral Research in Progress:**

- ▶ Travel demand modelling under multi mode and multi path assignment with special emphasis on estimation of patronage for mass transit modes (D Uday Chander)
- ▶ Improvement of Urban Public Transportation and Implementation Strategies (P. Sharat Chandra)



# CUTS – Research Initiatives

## (M.Tech. Dissertation Works Completed)

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- ▶ **Traffic assignment using path size Logit model**
- ▶ **Modelling terminal access mode choice influence on intercity passenger travel behaviour**
- ▶ **Appraisal of activity durations using time-use concept**
- ▶ **Traffic Impact Analysis**



## CUTS – Research Initiatives (M.Tech. Dissertation Works Completed)

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- ▶ **Urban growth modelling for Hyderabad Urban Agglomeration**
- ▶ **Land Use Transportation Model Using Gravity Opportunity Technique for Hyderabad Metropolitan Area**
- ▶ **Evaluation and Analysis of Land Use Planning for Hyderabad Urban Development Authority**



# CUTS – Research Initiatives

## (M.Tech. Dissertation Works Completed)

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- ▶ **Speed, Flow and Headway Modelling of Urban Traffic**
- ▶ **Delay at signalised intersections under heterogeneous traffic conditions**
- ▶ **Capacity of urban arterials**
- ▶ **Delay Modelling At Urban Uncontrolled Intersections**
- ▶ **Capacity of unsignalized intersections under mixed traffic conditions**



# CUTS – Research Initiatives

## (M.Tech. Dissertation Works Completed)

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- ▶ **Urban Corridor Management for Heterogenous Traffic Conditions – A Case Study of Ameerpet to Kukatpally Corridor, Hyderabad**
  - ▶ **Parking choice model based on parking behaviour characteristics**
  - ▶ **Evaluation of Transportation System Management Actions Using GIS**
  - ▶ **Modelling of road accidents – Impact of Traffic parameters**
  - ▶ **Highway Accident Modelling - Influence of Geometrics**
  - ▶ **Modelling Of Road Accidents by Using Artificial Neural Networks**
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# CUTS - Development of Manuals

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- ▶ Safety Guidelines for Planning, Design and Maintenance of Urban Streets
- ▶ Traffic Regulation & Management
- ▶ Urban Transportation Planning



## CUTS - MOUs

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- ▶ An MOU was signed with PTV AG Vision, Germany to undertake research of mutual interest in Urban Transportation and conduct workshops / training programs jointly. Duration of MOU is for 5 years initially. Later, it may be extended for another five years.



## CUTS – Possible Collaborations

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- ▶ ITE, USA to assist in establishing TMC in Hyderabad and also to take up technology demonstrative projects.
- ▶ UICON, USA to explore the possibility of establishing T2 centre at NITW
- ▶ Arizona State University, Tempe, USA – Activity Based Modeling
- ▶ QUT, Brisbane – possible cooperation in road safety / smart systems



## CUTS – Possible Collaborations

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- ▶ NRSC, Hyderabad – RS&GIS in Urban Growth / Land Use Planning
- ▶ CRRI, New Delhi
- ▶ HMDA, Hyderabad – To be retained as Technical Advisor (under process)
- ▶ Vijayawada, Visakhapatnam, Tirupati –UDAs & MCs, etc.



# Advanced Traffic Engineering Lab

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- ▶ **Equipment to be procured**
  - ▶ Laser Speed Guns
  - ▶ Handy cams / Video Camera with Traffic Analyser
  - ▶ Portable Vehicle Detectors & Classifiers
  - ▶ Air Pollution Monitoring Equipment with GPS
  - ▶ Tail Pipe Emission Measurement Equipment
  - ▶ Sound level Meter with Traffic Noise mapping software, etc.



# Transportation Software Lab

- Establishment of Laboratory for Travel Demand Modelling, CAD and RS & GIS

## Proposed Hardware & Software for CAD/GIS Lab.

- 1) 2 Servers, 40 Pentium based workstations, 2 notebooks, Networking, and OS
- 2) A0 Scanner, A0 plotter, Colour Laser Printer
- 3) Software Packages: EMME, TransCAD, CUBE , MXSuite, AIMS, VISSIM, ERDAS, ArcGIS, etc.



# CUTS – Knowledge Centre

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- ▶ The proposed Centre for Urban Transportation Studies will be developed as a knowledge centre housing different activities related to planning, design, operation and management of Urban Transportation Systems with the following objectives.
  - ▶ Identify Traffic and Transportation Problems in Urban Areas
  - ▶ Preparation of Digests / monographs on different aspects of urban transport based on the state of the art literature
  - ▶ Documentation of Literature, especially case studies, research reports, consultancy reports pertaining to Urban Transport
  - ▶ Storage of Travel & Traffic Data w.r.t. urban travel
  - ▶ Maintenance of web portal with open access interface



# Industry Extension Studies

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- ▶ Design Advisor for Hyderabad Growth Corridor – Outer Ring Road – 8 lane expressway
- ▶ Assisting HMDA in preparation of RFP for PVNR Elevated Expressway – Electronic Tolling System
- ▶ Providing Technical Assistance to HMDA for CTTS
- ▶ In discussion with Warangal Municipal Corporation for the preparation of Mobility Plan for Warangal city



# Governing Council Members

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1	Director, NIT Warangal	Chairman
2	OSD (MRTS) / Director (UT), MOUD, GOI, New Delhi	Member
3	Principal Secretary, MA&UD Dept, GoAP, Hyderabad	Member
4	Metropolitan Commissioner, HMDA, Hyderabad	Member
5	Commissioner, GHMC, Hyderabad	Member
6	VC & MD, APSRTC, Hyderabad	Member
7	Director, CRRI, New Delhi	Member
8	Chief, Transport and Communications, MMRDA, Mumbai	Member
9	Additional Commissioner of Police (Traffic), Hyderabad	Member
10	Managing Director, Hyderabad Metro Rail Ltd., Hyderabad	Member
11	Head, Department of Civil Engineering, NIT Warangal	Member
12	Principal Coordinator, COE-UT, IIT Delhi	Member
13	Principal Coordinator, COE-UT, CEPT, Ahmedabad	Member
14	Principal Coordinator, COE-UT, IIT Chennai	Member
15	Principal Coordinator, CUTS, COE-UT, NIT Warangal	Convenor

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Thank You!

