PRESENTATION OVERVIEW

- Dublin Transportation History
- Current State
- Modes of Transportation
- Current Initiatives
- Where We Stand
DUBLIN

- Capital City of the Republic of Ireland
  - Population: 1.1 million
  - Population of the Republic of Ireland 4.6 million

- Greater Dublin Area
  - Encompasses Dublin City and six counties
  - Densely populated and heavily trafficked
  - 3.8 million tourists visited Dublin in 2009
DUBLIN CITY AND GREATER DUBLIN AREA
HISTORY OF TRANSPORTATION IN DUBLIN

- Ireland’s first railway opened in 1834
  - Dublin and Kingston Railway 6 miles
  - Now a part of the DART commuter rail system

- Bus services originated in 1872 as horse trams
  - Trams electrified by 1900
  - Bus services were created to reach areas not covered by trams
  - CIE was created in 1945 to combine bus and rail services
  - By 1950 all tram lines were replaced by buses
DUBLIN TRANSPORTATION TODAY

- High levels of traffic congestion in the city center and the surrounding area

- National Transport Authority
  - Responsible for the development of an integrated transport system within the Greater Dublin Area

- Principle functions
  - Strategic planning for transport
  - Develop an integrated, accessible public transport network
  - Promoting public transport, cycling and walking over private
  - Provision of light rail, metro and heavy rail
  - Effective management of traffic and transport demand
Due to the weather conditions, snow, only about 60 out of the 172 bus routes are operating normally.

Note: This real time information is updated as of December 5th, 2010
INTERRUPTIONS DUE TO WEATHER

LUAS lines are also restricted due to current weather conditions.

Note: This real time information is updated as of December 5th, 2010
Main public transport provider since 1987

Extending as far as Balbriggan, Newcastle and Dunboyne

1,050 buses run 172 lines servicing 150 million passengers each year

Transporting 70% of all public transport commuters at peak time

Other bus services: Radial, Cross City, Orbital, DART Feeder, Airport Services, Xpresso, Nitelink, Railink, Schoollink and Sightseeing tours.
Dublin Area Rapid Transit (DART) came into operation in 1984.

Suburban railway network run along the coastline of Dublin Bay.

Tracks spanning across 5.2 kilometers.

Connect Malahide and Howth to Wicklow.

Continuous increasing demand:
- In 2000, increased passenger capacity by 12.5%.
- In 2003, increased another 19.6%.
Dublin Area Rapid Transit services
LUAS started servicing in 2004, with the investment of 728 million euro

Service Lines
- Green line: St. Stephen's Green to Cherrywood
- Red Line: The Point to central Tallaght

49 stations and 34 kilometers of track, carries 70,000 passengers on a daily basis

Benefits:
- Less air pollution, LUAS produces 5.48 times less CO₂ than cars
- Less noise
- Less vibration from road traffic
- Less traffic jam
LUAS red line an green line services
Private vehicles
63,976

Bicycles
6,143

Walkers
X<1.1 million citizens+3.8 million tourists
National Development Plan for the transportation system in Ireland over 2006-2015

Objective
- Increase accessibility
- Ensure sustainability
- Expand capacity
- Enhance quality

Current Agenda
- Implement a phased program of demand management measures
- Introduce a smartcard integrated ticket
- Enhance bus network
- Extend the LUAS network
- Develop Metro North and Metro West
TRANSPORT 21 METRO DESIGN

- Complement LUAS tram network and DART routes
- Metro lines will have exclusive track use along with interconnections at many locations
- Park-and-ride sites are planned to encourage the use of public transportation
- Metro's provide a direct connection to Dublin Airport
- Largest Prospective capital investment to date in Ireland (estimated to cost about 9 billion dollars)
- High density types allow for large volumes of passengers
- Cater for disabled access
Expected to be opened in 2012
Capacity for 20,000 people per hour and 34 million per year
Runs every 2 minutes in peak
Current Stage: Permission to Build and Operate
14 initial stops starting at St. Stephen's Green and continues to Swords
Total length of 16.5 km (10.25 miles)
20 minutes expected running time from start to Airport
Expected to start running by 2014
Capacity for 10,000 people per hour, about 20 million per year
Runs every 4 minutes in peak
Current Stage: Designing lines and stops
20 initial stops starting at Tallaght and ending at Metropark station
Approximately 24 km (14.9 miles) long
Estimated to be under an hour from beginning to end
Early stages evaluated route options and the effect on areas within vicinity.

Work supported by Dublin Transport Office (DTO) with the use of SATURN models of optimal flow across the road traffic network.

Used in conjunction with key system equations of Nagurney and Qiang.

The measure of network performance/efficiency is based on summing the ratio of demand to equilibrium disutility for each O/D pair in the network, and then scaling this number.

Important Measure: ratio of difference between the efficiency measures for the network with and without a given component to the efficiency measures with all components included.
COSTS

- **Project TRENEN**
  - An optimized model that:
    - increase the usage of the public transportation
    - minimize the societal cost.

- For Private Transportation Cost
  - Parking cost
  - Travel time
  - Toll
  - Fuel cost
  - Vehicle maintenance cost (often overlooked)
  - Taxes

- For Public Transportation Cost
  - Waiting time
  - Transportation fares
WHERE WE STAND?

- **Short Term Suggestion**
  - A third Dublin airport terminal connects with Metro West can relieve 20 million passengers per year
  - Government can encourage firms to subsidize employees to take public transportation

- **Long Term Suggestions**
  - Dublin can invest more on the underground transit system to decrease congestion of the roads due to severe weather conditions
  - Obsolete bus routes can be eliminated with the replacement of Metro transit services

- **Benefits**
  - Increase employment opportunities
  - Promotes Green Initiatives
  - Decrease city congestion issues
  - Decrease disutility