

# Beijing Rising: Global City Aspirations







*Overview*

**AECOM Global Cities  
Institute**

**What is a “Global  
City”**

**Beijing: A City of  
Extremes**

**A Forward Proposal**

**Closing Observations**



AECOM  
GLOBAL  
CITIES  
INSTITUTE

These are the human settlements with more than one million residents, arranged roughly by their relative geographic location, the larger the name, the larger the population. The smallest name represents more than 1m people; the largest, more than 30m people.

The AECOM Global Cities Institute is an urban laboratory that goes beyond practice. Its main purpose is to imagine better cities.

Interested?  
Learn more at [aecomglobalcities.com](http://aecomglobalcities.com)



AECOM Global Cities Institute draws on the company's fully integrated planning, design engineering and management capabilities, **to help make cities better**. Our city teams bring together a wide range of disciplines: from architects and environmental planners, to transport engineers and development economists, to advance urban progress.

We partner with cities to diagnose their most pressing issues, bringing together the best expertise in **a multi-disciplinary laboratory** that goes beyond traditional practice.



# Why a Global Cities Institute?



## Imagine better regions and cities:

- Climate change and impacts
- Population growth and increased density
- Urban form and sustainability
- Mobility and congestion
- Economic vitality
- Social equity
- Environmental preservation
- Infrastructure finance
- Development decision-making

*Regional and city leaders need solutions and partners*



# Basic Approach

# 1

## Step 1 Understanding Aspirations

/ Conduct in-depth analysis of contemporary urban issues within target region/city.

/ Reach out to partners within the region/city.

/ Fact-finding exercise to define what areas of regional/city life merit the Institute's expertise.

# 2

## Step 2 Framing Success

/ Convene team of practitioners from a wide range of disciplines.

/ Challenge preconceptions that may be barriers to urban progress.

/ Explore social, economic and environmental opportunities.

# 3

## Step 3 Region/City Ambitions Report

/ Publish a strategic vision that articulates opportunities for improving regional/city quality of life and competitive advantage.

# 4

## Step 4 Leaders Forum

/ Forum attended by regional/city leaders, academics, business and civil society to explore the results and discuss next steps.



# A path to integrated, comprehensive solutions





# Views of what constitutes a “Global City” are diverse

Agility in responding to the complex challenges of the contemporary world.





# A Compelling View: “The Urban Elite”

“The ports of the global age, the places that both run the global economy and influence its direction. The cities where decisions are made, where the world’s movers and shakers come to exchange the latest news and information. They are places that boast both old-fashioned power and new –fashioned flair. They are where you go to do business, yes, but also to see the greatest art, hear the greatest orchestras, learn the latest styles, eat the best food and study in the finest universities. They have global corporations – this goes without saying. But they also have think tanks, jazz bars and broadband. In a word, they have clout.”

*A.T. Kearney  
The Urban Elite  
The A.T. Kearney Global Cities Index 2010*

# The A.T. Kearney Global Cities Index 2010

*“Global is the increasing integration of economies, societies and cultures around the world. ...It is symbolized by movement – of money, goods, people, ideas and jobs.”*

## Ranking Factors:

- Business Activity (30%)
- Human Capital (30%)
- Information Exchange (15%)
- Cultural Experience (15%)
- Political Engagement (10%)



# Top Cities in the 2010 A.T. Kearney Global Cities Index

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1. New York
2. London
3. Tokyo
4. Paris
5. Hong Kong

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5. Hong Kong
6. Chicago
7. Los Angeles
8. Singapore
9. Sydney
10. Seoul



# Where Does Beijing Rank?



**Where does Beijing rank on the 2010  
A.T. Kearney Global Cities Index?**

**15**



# Rich Cultural Heritage





# Growing Economy





# Rampant Population Growth

Increased an average of  
3.8% per year for past  
10 years

19.6 million in 2010

Official estimates do not  
include unregistered  
rural migrants (40%?)



# Robust Transportation System Development



# Enhancing the Global Image





# Growing Affluence





# Too Much of a Good Thing Can Be Bad



# Air Pollution Poses Significant Health Issues

The background of the slide is a photograph of an industrial facility, likely a power plant or refinery, silhouetted against a bright, hazy sunset or sunrise. Several tall smokestacks are visible, with one on the right emitting a plume of white smoke. The sky is a mix of orange, yellow, and white, suggesting a clear but hazy day.

30% of local energy supply  
is derived from coal

Not improved significantly  
in past 5 years

Energy consumption is  
increasing over 4.4% per  
year



# Greetings from Beijing





# Drought Conditions Persist

Domestic water  
consumption is increasing  
at over 3% year



# Poor Water Quality, Dwindling Supplies





# Inadequate Drainage Systems





# Congestion is Legendary

Longest commuting times in  
China, at 52 minutes one way  
More vehicles per person  
than in New York or Tokyo



# Inadequate Infrastructure, Rising Demand





# Not All Participate in the “Boom”





# Beijing: Green Engine

1

## Address urban transport challenges

Coordinate land use and transport development.

More integrated public transport strategy including new policy mechanisms such as congestion charges.

Introduce intelligent and efficient roadway design.

Invest in alternatives: greenways, bring back the bike

2

## Restore and reconstruct watersheds and waterfronts

Improve quality of ecological environment: more diverse water sources, multifunctional environments, greater public interface with waterfronts

Integrated development and restoration of riverfront areas

3

## Build green municipal infrastructure to meet tomorrow's needs

A better water supply system, and a new sewage pipeline connecting fourth and fifth ring roads.

Smart urban stormwater and flood control system.

Alternatives in solid waste management.

4

## Guarantee energy efficiency and security

Self-generated non-fossil fuel based sources of energy.

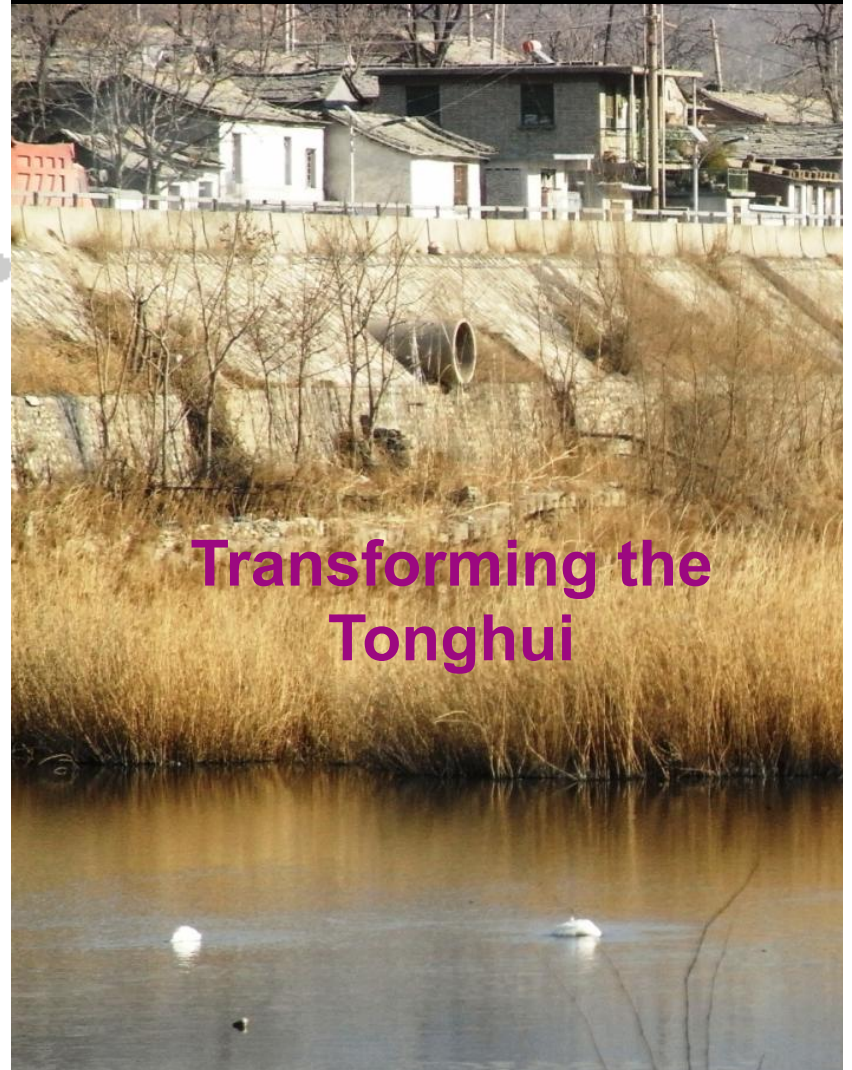
Reduce carbon emission intensity.

Empower a task force to coordinate and implement across bureaux.

## Pilot Project Guiding Principles

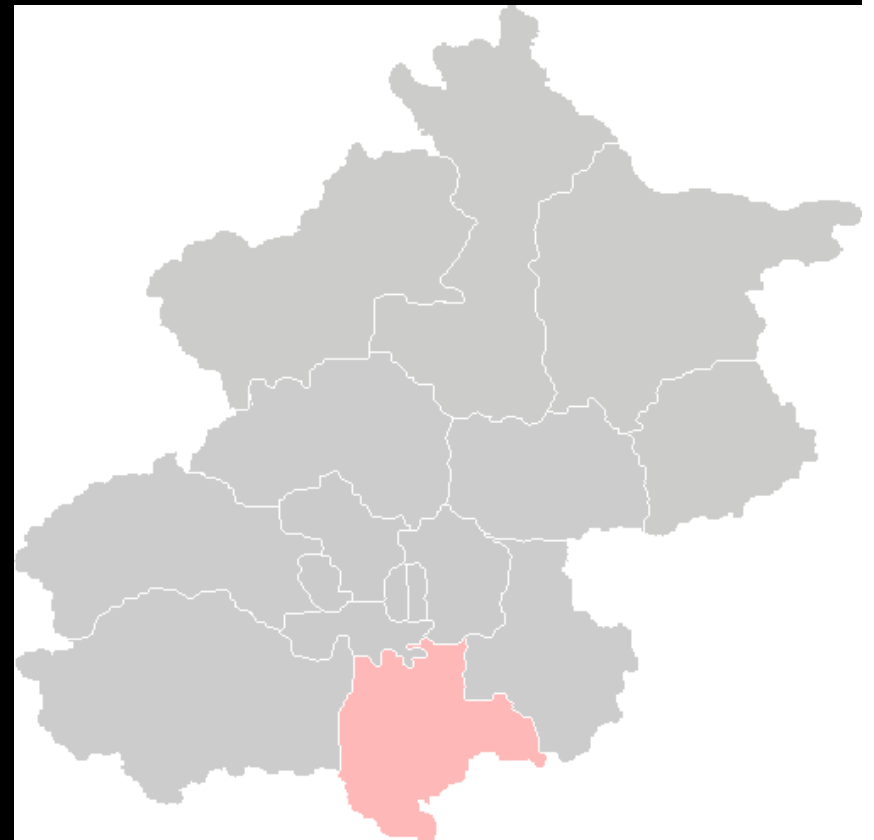


# A Forward Proposal: Two Pilots



# Daxing: Balancing Development Trajectory

- Suburb of Beijing
- 50km south of City Center
- Population under 1 million
- Site of Beijing's 2<sup>nd</sup> Airport (2015)
- Designated Satellite Town





# Daxing: Balancing Development Trajectory

目标1：协调交通和城市空间和用地的关系  
Integrate Transportation & Urban Form/Land Use

## 关键问题 Key Issues

“摊大饼、单中心”的城市形态，难以实现交通设施的集约化，大容量公共交通难以匹配

“Urban sprawl & singular centre” developing model fails to achieve the intensification of transport infrastructures and a high capacity of public transport.

城市核心区和拓展区功能疏解不到位，部分重点新城建设缓慢，难以实现职住平衡

Urban centers and extension areas face high transport pressure, together with the lagging of new town construction, so it is difficult to achieve work and residential balance.

“大院闭合式”或“大尺度设计”不合时宜

Inappropriate design—“enclosure” or “large scale”



# Daxing: Balancing Development Trajectory

目标1：协调交通和城市空间和用地的关系  
Integrate Transportation & Urban Form/Land Use

## 策略 Strategies

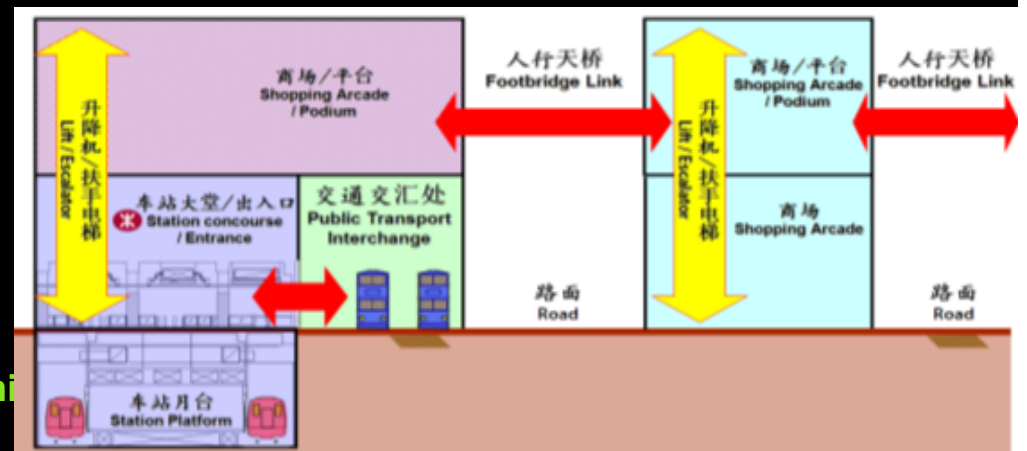
限制中心城规模，发展职住平衡的新城，形成多中心的城市空间布局

Restricting urban development in the centre while developing new town with mixed functions, in doing so to build polycentric spatial structure  
加速新城内及新城与中心城之间的重大基础设施

Accelerating essential infrastructures between new town and city center

遵从PTOD理念的城市设计，鼓励混合开发

Encouraging mixed-functional development with PTOD perspective





# Daxing: Balancing Development Trajectory

## “New Town” Model Project

- Establish a “Smart Work Center”
  - *reduce need to “commute to compute”*
  - *promote jobs-housing balance*
- Provide integrated mobility options
  - *ITS, electric vehicles, travel demand management, non-motorized*
- Real-time consumption metering



Beijing's resource portfolio

# Transforming the Tonghui

## 2.0 深化计划 Actions For Next Step

- 基础研究  
Analysis

水资源短缺，河道干涸，流域生态系统恶化  
WATER SHORTAGE, DRY RIVERS AND DEGRADED AQUATIC ENVIRONMENT

滨水地区与城市关系不紧密  
LACK OF RELATIONSHIP BETWEEN RIVERS AND URBAN AREA

流域滨水地区价值和效益有限  
LIMITED VALUE OF WATERFRONT ZONES





# Transforming the Tonghui

## 2.0 深化计划 Actions For Next Step

- 目标设定  
Goals

近期 Short term : 2011——2025

中期 Mid term : 2025——2040

远期 Long term : 2040——2050

稳步恢复 **生态** 【前提】 Ecological Recovery

凸显滨水 **活力** 【核心】 Energetic Watershed

增色首都 **风貌** 【升华】 Promoted Capital Scenery

修复蓝色珍珠项链  
创新世界滨水魅力

RESTORE THE BLUE PERAL NECKLESS  
CREATE WORLD CLASS WATERFRONT  
GLAMOR



# Transforming the Tonghui

## 2.0 深化计划 Actions For Next Step

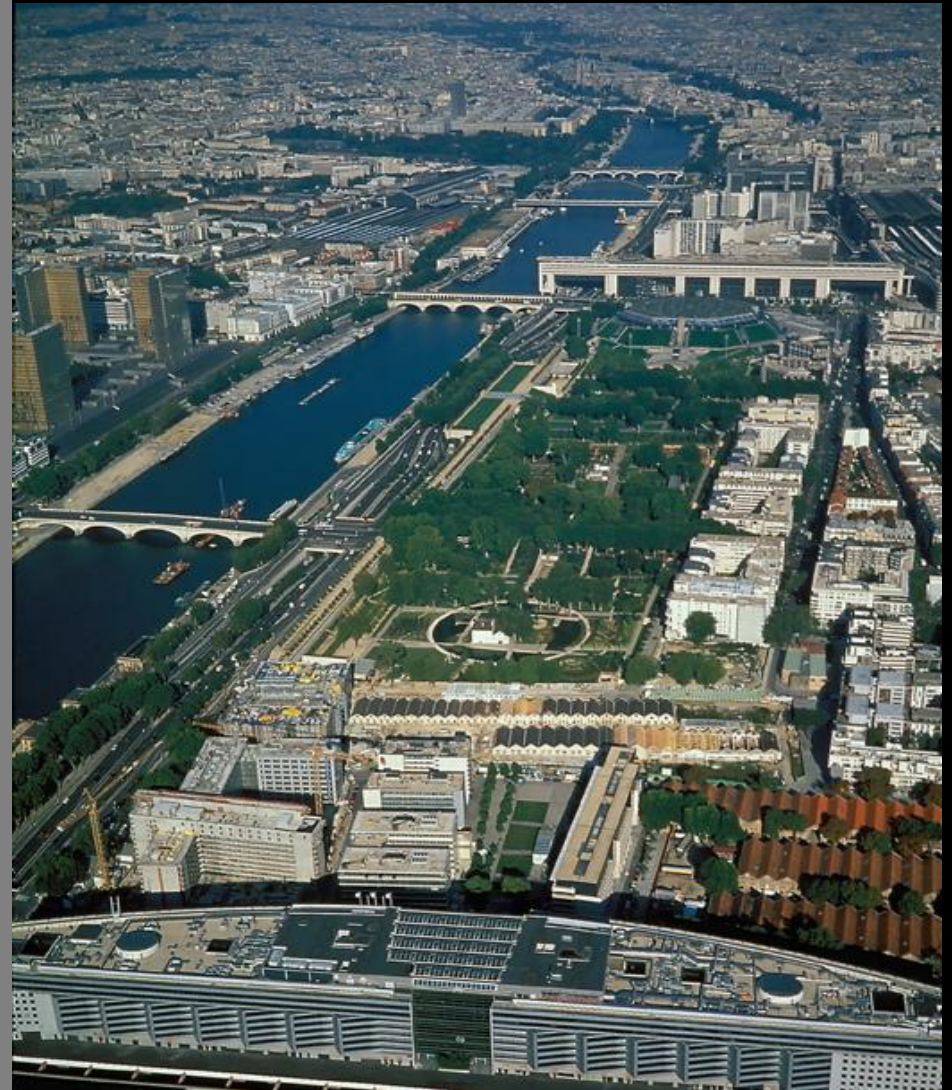
- 核心策略  
Strategies

重新激活流域滨水生态  
REACTIVATE WATERFRONT ECOSYSTEM

地表水精明配置  
SMART ARRANGE FOR SURFACE WATER

营造滨水地区为公共生活核心  
THE WATERFRONT AS A CORE PUBLIC REALM

塑造世界级滨水标志性场所  
BUILD WORLD WATERFRONT LANDMARK





# Transforming the Tonghui

## 2.0 深化计划 Actions For Next Step

- 实施计划  
Action Plan

流域战略性总体规划  
WATERSHED STRATEGICAL PLAN

重要河流的生态改善计划  
ECO-IMPROVEMENT PLAN FOR KEY RIVERS

重点滨水地段的  
URBAN DESIGN FOR KEY WATERFRONT AREA



# Transforming the Tonghui

## 精细化设计案例 Case Studies

地利用与交通规划的进一步整合-北京通惠河北路道路空间改造与再利用

**Integrated Land Use and Transport Planning-Beijing Tonghui River North Road Redevelopment**

•调整方案评析 Plan Evaluation :

有力的开发出滨水土地潜在价值，赢得约项目花费3-4倍的盈利

**Significantly creating potential value of watershed land, and making 3 to 4 times profits**

最大程度上开放出滨水空间，增加其可达性和亲水性，增加了区域环境质量，带动了区域经济活力

**To a large extent exploring watershed land value, improving spatial attractiveness and pedestrian accessibility, in tune to enhancing regional economic competitiveness**

提升区域交通能力，实现交通的可持续性发展

**Promoting capacity of regional transport system and to some extent achieving sustainable transportation**







## **“Global” Themes in Transportation Solutions**

**“building” out of  
congestion never works**

**success is determined  
beyond the right-of-way**

**real solutions cross boundaries**

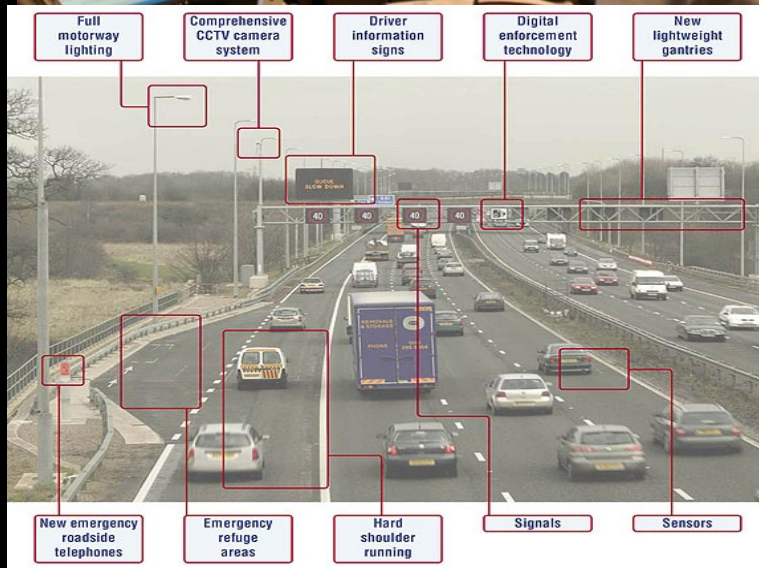
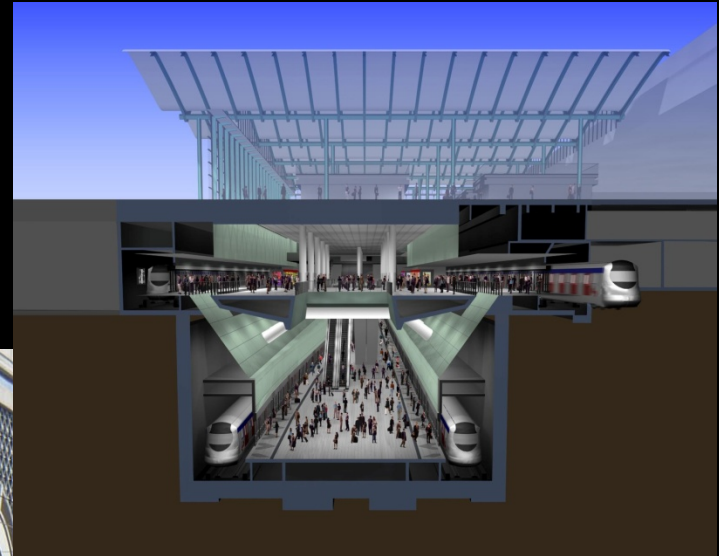
**“green” is the new \$green\$**

**we are what we measure**



# "Building" Out of Congestion Never Works

Insight: focus on integration, efficiency and leverage





# Success is Determined Beyond the Right-of-Way

Insight: transportation is a means, not an end





# Land Use Context



## High Intensity Urban Core

- Downtown cores - most accessible place in the region
- Well-established and connected street pattern
- Densities supportive of transit
- Transit ranges from small local stations to large multi-modal stations
- Strong TOD development market

## Established Urban Neighborhoods & Historic Communities

- Includes old streetcar suburbs and historic towns
- All have individual character built-up over time
- All feature a connected block system and transit-supportive densities
- TOD development market varies, may need assistance.

## Industrial Communities

- Important Centers of Employment
- Many have individual character built-up over time
- Generally well connected street network
- Often there are physical barriers to TOD Development
- TOD development market varies, and may need assistance.

## Established Suburban Neighborhoods

- Most common built form
- These areas are well developed, but lack orientation to the public realm
- Access usually comes from a fewer large roads
- Densities tend to be below transit-supportive levels.
- Few centers of activity
- TOD development market varies, may need assistance

## New Suburban and Greenfields

- Outermost edge of the transit region
- Areas are quickly developing
- Connections are limited; but opportunities abound
- Densities are well below transit-supportive levels
- Stations located here will attract riders from a larger area
- No existing centers of activity
- TOD development varies.





# Real Solutions Cross Boundaries

Insight: there is no perfect model, only accommodations

- Interdepartmental
- Inter-jurisdictional
- modal
- public sector and private sector
- stakeholders and government



# Public-Private-Partnership Risk Transfer

## Traditional

### Public Sector Risks

Functional Program

Design

Financing

Facility Maintenance

Lifecycle

Availability and Performance

### Private Sector Risks

Construction & Delivery Schedule

## Design Build Finance Maintain

### Public Sector Risks

Functional Program

Project Output Specifications

### Private Sector Risks

Design

Construction & Delivery Schedule

Financing

Facility Maintenance

Scheduled Lifecycle

Availability and Performance



# Contracting Systems

## Project Delivery Method

- Design – Bid – Build (**Traditional**)
- Design – Build (DBOM, DBOF, etc)
- Construction Manager At-Risk
- Construction Manager as an Agent

## Contract Type

- Unit Price plus Quantity (**Traditional**)
- Fixed Price
- Negotiated cost-plus-fixed fee (open book)
- Negotiated cost-plus-percentage fee (open book)
- Guarantee maximum price

## Procurement Method

- Sealed bids
- Lower price (**Traditional**)
- A+B
- Competitive negotiation
- Unsolicited Proposals

# Green is the New \$\$Green\$\$



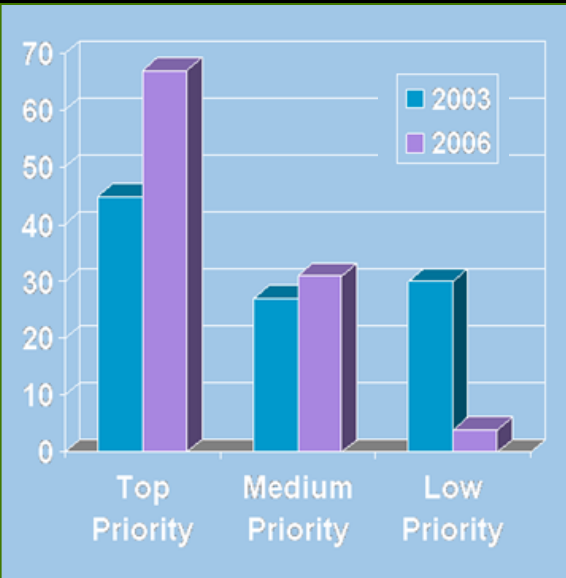


# We Are What We Measure

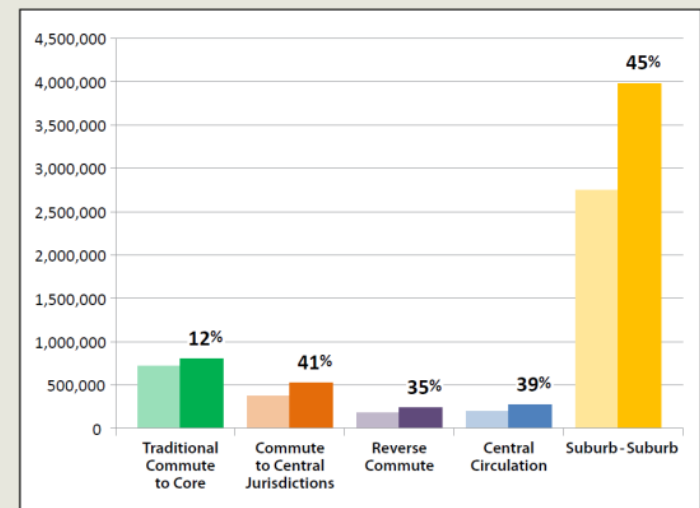
Insight: measure results by outcomes, but set realistic expectations

## Satisfied, Very Satisfied Score

<b>Service</b>	
Area this route covers	82%
Walking distance to your bus stop	66%
When route operates	79%
Cost of fare	67%
Frequency of buses arriving at your stop	76%
<b>Vehicles</b>	
In good condition	97%
Clean	92%
<b>Drivers</b>	
Drive safely	89%
Knowledgeable about overall system	89%
Friendly & helpful	86%
<b>Amenities</b>	
Cleanliness of terminals	85%
Cleanliness of bus stops & shelters	81%
Availability of waste & recycling containers	69%
How well bus stops are lit	80%
<b>Vending Machines</b>	
VivaNow Validator easy to use**	91%
Vending machines easy to use*	88%
Using a VivaNow Validator	85%
VivaNow Validator reliable**	79%
Purchasing from ticket vending machines	75%
Ticket vending machines reliable*	71%



Regional Commute Trips by Type 2008-2040



# Quick Successes Matter

Viva BRT – York, Canada: Implementation in 3 phases over 25 years



**Phase 1**  
**“Quick Start”**  
**2003-2006**



**Phase 2**  
**BRT & Subway Extensions**  
**2007-2015**



**Phase 3**  
**Evolving technologies**  
**2015 - 2028**

**cost-effective capital and operating solutions**

**AECOM**





## **“Global” Themes in Transportation Solutions**

**“building” out of  
congestion never works**

**success is determined  
beyond the right-of-way**

**real solutions cross boundaries**

**“green” is the new \$green\$**

**we are what we measure**

**In complexity there is opportunity**



**What we see as problems often unlock unrealized potential**



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