AGENDA

1. CORRIDOR STUDY BACKGROUND AND OUTLINE

2. PRESENTATIONS:

   Preliminary Analysis: 355/270 Corridor Economy
   Marie Howland, Professor, Urban Studies and Planning Program
   University of Maryland, College Park

   Advancing Science in Maryland
   David McDonough, Senior Director, Development Oversight

3. DISCUSSION:

   Montgomery County Department of Economic Development
   Pradeep Ganguly, Director

   University of Maryland
   Nariman Farvardin, Provost

   Johns Hopkins University
   David McDonough, Senior Director, Development Oversight

   University of Maryland
   Marie Howland, Professor, Urban Studies and Planning Program
THE GENERAL PLAN
Wedges and Corridors
Adopted 1964, Approved 1969, and Refined 1993
MASTER PLAN PROGRAM

Master Plans to be Updated:

- Shady Grove Sector Plan (Completed)
- Twinbrook Sector Plan
- White Flint Sector Plan
- Germantown Employment Corridor
- Gaithersburg West Vicinity
SUSTAINABILITY
A New Goal for the 21st Century

Global Warming – Energy Constraints

ENVIRONMENT

SUSTAINABLE DEVELOPMENT

ECONOMY

SOCIAL EQUITY

Global Trade-Geo-Political Trends
Demographic Shifts – Migration Issues
CORRIDOR STUDY OUTLINE

A People-Centric Approach to Analyzing the Corridor From Five Perspectives

1. **Work**
   Jobs, Labor Force, Investment, (Economy)

2. **Life**
   Housing, Shopping, Interacting, (Society)

3. **Access**
   Trips, Roads, Transit, Bikes, Walking, (Mobility)

4. **Health**
   Air/Water Quality, Active/Passive Recreation (Ecology)

5. **Balance**
   Energy, Finance, Land Use and Design
WORK

PRELIMINARY ANALYSIS:
355/270 CORRIDOR ECONOMY

Marie Howland, Professor
Urban Studies and Planning Program
University of Maryland
College Park, Maryland
Divide the Local Economy Into Basic and Non-Basic Sectors

- Non-Basic Sector:
  - The activities made possible by income from the basic economy

- The Basic Sector:
  - The activities that produce products and services that are exported to the rest of the world.

Non-Basic

Basic

Exports to rest of world

Income from rest of world
Examples of Non-Basic Industries in Montgomery County

- Retail Trade
- Real Estate
- Arts and Entertainment
- Health Care and Social Assistance
- Local Government
Examples of Basic Industries in Montgomery County

- Scientific Research and Development
- Computer System Design and Related Services
- Pharmaceutical and Medical Manufacturing
- Corporate Services
- Associations
- Federal Government
High Technology is Important to the Basic Sector in Montgomery County

Montgomery County Employment Base
Source: County Business Patterns

- Local Government: 7.9%
- State Government: 0.2%
- Federal Government: 8.2%
- Basic Industries: 38%
- Non-Basic Industries: 45%
- Other Basic Industries: 17%
- High-Tech Industries: 21%

Source: County Business Patterns and M-NPPC, 2005
What is the High Technology Sector in Montgomery County?

- **Biotechnology** – The commercial application of living organisms or their products through deliberate manipulation of their DNA molecules

- **Information Technology (IT) –** Includes computer and telecommunications firms developing software, providing systems integration, designing websites, and providing internet services

- **Nanotechnology** – Ability to see, measure, and manipulate objects at the atomic scale. Nanotechnology can span all industries
Montgomery County’s High Technology is Important to the Nation

- Maryland ranks 4th in the nation in number of biotechnology firms.
  
  *(One-third of state’s biotech firms are clustered in Montgomery County)*

- Maryland ranks 6th in the nation in IT employment.
  
  *(One-third of state’s IT workforce is employed in Montgomery County)*

- Maryland ranks 6th in nanotechnology research and development dollars

Montgomery County's Role and Competitive Advantage in Biotechnology

- The high cost of land and the need for large parcels at the production phase, limits the County’s competitiveness in the large scale manufacturing of components and drugs.

- Montgomery County’s niche is in the research and development to prototype phase of biotechnology.
Implications For Land Requirements

Our strength in research flourishes in compact high-density areas to foster collaboration. Montgomery County also needs adequate industrial and wholesale uses that support the biotechnology industry.

*For example: scientific supplies and office equipment wholesalers*
Montgomery County’s Role in IT:

- Montgomery County’s strength is in software development, data processing, computer programming, and computer systems design and integration.

- Smaller Firms

- Larger firms go to Northern Virginia where there are larger parcels of land.

- Northern Virginia has one of the country’s four network access points so they attract more and larger internet providers than Montgomery County.

The Reasons Why the Biotechnology and IT Industries are Strong in Montgomery County

1. The federal presence and leadership in bioscience, IT and nanotechnology are the base for a world class center in these fields because of:

- NIH
- NIST
- Satellites for DHHS and DOE
- FDA
- Walter Reed Army Medical Center
- Bethesda Naval Hospital/Uniform Health Service
The Reasons Why the Biotechnology and IT Industries are Strong in Montgomery County

2. Montgomery County’s proximity to two major research universities:

- Johns Hopkins
  - *First in research and development expenditures in the U.S. for 26 years*

- University of Maryland
  - *UMD ranked as second best computer science program in the nation (Communications of the ACM, June 2007)*

- Both strengthened by their campus presence at the Shady Grove Life Sciences Complex
The Reasons Why the Biotech and IT Industries are Strong in Montgomery County

3. A highly educated labor force:

- 2nd highest percent of residents with a Ph.D. among all counties in the U.S.
- 6th highest percent of residents with a masters degree
- 1st in the nation in the percent of residents with a professional degree

Source: M-NCPJC, June 2007
The Reasons Why the Biotechnology and IT Industries are Strong in Montgomery County

4. A high quality of life attracts people for working and living:
   - Nationally recognized public schools
   - Successful urban centers of Bethesda and Silver Spring
   - Open space and parks
   - Metro system
   - Adjacency to Washington, D.C.
What is an Industry Cluster?

- Clusters are agglomerations of interrelated activities that foster wealth creation in a region, principally through the export of goods and services beyond the region.
Clusters are especially important in cutting edge sectors because they supply:

- An educated and specially trained workforce
- A network of specialty suppliers and services
- Venture capital availability
- Expertise, and entrepreneurial capability
- Knowledge sharing
Innovative industries thrive where there are connections and linkages among firms, specialized suppliers, customers, and workers.

Continuous innovation requires a sharing of formal and informal information between firms and workers in the high tech industry.

This is the reason we see successful high-technology firms spatially concentrated.
To Remain Competitive Montgomery County Should:

1. Continue to foster social diversity:
   - World class scientists come from all countries. Montgomery County must be a place welcoming to a diverse population of many ethnic and religious backgrounds.
   - Innovation occurs in environments where there is a cross breeding of different and unconventional ideas and knowledge.
To Remain Competitive Montgomery County Should:

2. Maintain a continued high quality of life for residents and employees, including open space, good environmental quality, lively urban centers, and top schools
To Remain Competitive Montgomery County Should:

3. Foster Connectivity and Accessibility:
   - Within the high technology clusters in the county
   - With high technology clusters in other Virginia and Maryland counties
   - With other high technology around the country and world
Advancing Science in the Baltimore Washington Region

Translational Research in the 21st Century

WORK MODELS - July, 2007
David McDonough, Senior Director Development Oversight
Advancing Science In Maryland

Global Competition
## 52 Key Competitors

### North America (15)
- Austin, TX, USA
- **Baltimore/Washington, DC, USA**
- Boston, MA, USA
- Los Angeles, CA, USA
- Minneapolis / St. Paul, MN, USA
- Montreal, Canada
- New York/New Jersey, USA
- Philadelphia, PA, USA
- Research Triangle, NC, USA
- Rochester, NY, USA
- San Diego, CA, USA
- San Francisco, CA, USA
- Saskatoon, Canada
- Seattle, WA, USA
- Toronto, Canada

### Central America / South America (3)
- Belo Horizonte / Rio de Janeiro, Brazil
- Sao Paulo, Brazil
- West Havana, Cuba

### Continental Europe (8)
- BioAlps, France / Switzerland
- Biovalley, France / Germany / Switzerland
- Brussels, Belgium
- Helsinki, Finland
- Medicon Valley, Denmark / Sweden
- Paris, France
- Sophia-Antipolis, France
- Stockholm / Uppsala, Sweden

### Asia (14)
- Bangalore, India
- Beijing, China
- Dengkil, Malaysia
- Hokkaido, Japan
- Hong Kong, China
- Hyderabad, India
- Kansai, Japan
- New Delhi, India
- Shanghai, China
- Shenzhen, China
- Singapore
- Taipei, Taiwan
- Tokyo-Kanto, Japan

### Africa (1)
- Capetown, South Africa

### Mideast (1)
- Israel

### Australia / New Zealand (4)
- Brisbane, Australia
- Dunedin, New Zealand
- Melbourne, Australia
- Sydney, Australia
Global Competition – Case Study: Singapore (Biopolis)

Singapore’s industrial transformation

Adding knowledge and innovation as drivers for growth

Source: Presentation at the International Conference on Science & Technology for Sustainability 2006
Advancing Science In Maryland

National Competition

Economic Development Models

**Old Model**

**Government** drives economic development through policy decisions and incentives.

**New Model**

Economic development as a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration.

Source: BIO, State Government Initiatives in Biotechnology, September 2001; life sciences institutions’ web sites
New Model = Translational Research: University – Industry – Consumers

CONSUMERS: Health Services Providers

INDUSTRY: Biological Products Biopharmaceutical Products

UNIVERSITIES: Research Organizations

Educational Institutions Johns Hopkins & University of Maryland

Source: BIO, State Government Initiatives in Biotechnology, September 2001; life sciences institutions' web sites
Advancing Science In Maryland

NIH Roadmap Initiative: New Pathways to Discovery

- Genomics/Metabolomics/Proteomics
- Molecular Imaging
- Bioinformatics
- Nanomedicine
- Quantitative Medicine
- Novel Therapeutics

Generic Pathways
- Immunology and Inflammation
- Development and Senescence
- Oxidative Stress
- Other Generic Pathways
- Regeneration and Repair

Determinants of Health
- Environment
- Genetics
- Behavior

Specific Diseases
- Cardiovascular Diseases
- Chronic Lung Diseases
- Diabetes
- Neurological Diseases
- Cancer
- Other Diseases

NIH Roadmap Initiative: Research Teams Of The Future

- Population Biology
- Systems Biology
- Ethics
- Public Policy
- Finance and Economics
- Education

NIH Roadmap Initiative: Re-engineering The Clinical Research Enterprise

Source: Dr. Michael M.E. Johns' Predictive Health PowerPoint presentation
Questions to be Answered

Strategic Question: Do We Really Want to Compete In the World of Commercialized Science?

- Tactical Question #1: Are we – Universities, Industry, and Government in Maryland – willing to work together and change our culture?

- Tactical Question #2: How do we get more private capital into the state and how do we get more entrepreneurial, private management capability?

- Tactical Question #3: Are we ready to engage a consultant to help us transform our economy like Mass. or Calif.?
DISCUSSION