DART Impact Study:

Working Document for Development Issues

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Review of Development Impact Studies

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- Rail Transit Systems of Secondary Interest
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    - Toronto

- Other (non-rail) Transit Systems of Interest
    - Seattle
    - Houston
    - San Antonio
    - Ottawa

- Economic Impact Models
    - Puget Sound Council of Governments (PSCOG) STEP83 model
    - Texas Comptroller's Model
    - RIMS II
    - TRIM
        - TRansportation Impact Model
        - Ontario Ministry of Transportation (Canada)

Procedure for review

- Experience with system and/or model
- Model components
    - important inputs (impacts)
    - measuring and evaluating impacts
        - compilation
        - categorization
        - review
- Interviews (as applicable)
    - unanticipated effects
    - hindsight: should anything have been done differently?
- Identifying DART's development objectives
    - DART's role in development
        - Stated goals and objectives
        - Strategy for development
            - type of development desired
            - level of development desired
    - Comparison with Transit Systems reviewed
- Identifying procedures used to monitor development
    - Input (impacts or issues) selection
        - .Based on DART's goals and other system's experience
        - Input categories
            - land use
            - development impacts
            - joint development
    - Evaluation and presentation of method to monitor development impacts

II: Conceptual Study Framework

Terminology and Methodology

- Basic definitions
    - Benefit-Cost Analysis
        - total benefit to total cost
        - net benefits (net present value)
        - incremental B/C ratio
    - Direct Impacts
        - construction and operation of line
        - employment
        - vehicle acquisition and/or assembly
    - Indirect Impacts
        - production of intermediate goods offsite (e.g. rail and ties)
        - employment
    - Induced Impacts (ie "multiplier" effects)
- Modeling Techniques
    - Benefit-cost techniques
        - total benefit to total cost
        - net present value
        - incremental benefit-cost ratio
    - Input-Output Models

Possible Economic and Development Impacts

- Business and Industry Impacts
    - Direct expenditures, e.g.
        - Labor and materials for line construction, vehicle assembly
        - Annual O&M expenditures
    - Secondary impacts caused by direct expenditures, e.g.
        - employment
        - tax revenues
        - energy consumption
        - possible losses to corridor business during construction phase

- R.O.W. Acquisition Effects, e.g.
    - Business and employment loss due to displacement
    - Job and service redistribution within corridor and/or region
    - Property loss due to R.O.W. acquisition
- Impact on Business Growth, e.g.
    - Business expansion
    - New businesses
    - Reducing commuter cost (user time savings of light rail)
    - Redirecting travel patterns through depressed areas (Oak Cliff)
- Impact on Tourism, e.g.
    - Dallas Zoo
    - Transit Mall as CBD circulator
- Impact on Residential development, e.g.
    - Relocation during R.O.W. acquisition
    - Changes in rents and property values near rail line
    - New housing starts and multi-unit developments near rail line

<u>Possible Land Use Impacts</u>

- Existing conditions
    - Demographic and Socioeconomic Data, e.g.
        - population
        - income
        - ethnic groups
        - age
    - Land Use Data, e.g.
        - activity center location
        - growth and decline areas
        - availability of developable land
        - rents
        - absorption and vacancy rates
        - building permits
        - availability and cost of development capital
- Land Use Impacts
    - Regional Development
        - UMTA model framework assumes no net effect
        - Possible regional growth if DART has ability to relieve congestion

- Corridor Development
    - improving CBD access/desirability
    - development in line's area of influence
    - redevelopment possibilities
- Station Area Development
    - percentage of population and employment within a certain access time
    - changes in travel times (by mode)
    - access by various modes (including walk-on riders)
    - modes of feeder systems
        - bus routes
        - park and ride facilities
- Joint Development
    - Site identification
    - State laws/local ordinances concerning
- Favorable policies
    - Local Government
        - zoning changes for higher densities within walking distance
        - reduce or ceiling parking requirements near line
    - Sale/lease of land/air rights
    - Other incentives
        - tax incentives
        - assuming development risks

Table 1. Economic Impact Classification[1]

Class	Category	Effects	Direct	Indirect	Induced	Temporary/ Permanent
Business & Industry	Facility Construction	Expenditure on labor and materials for construction	•			T
		Secondary Effects induced by direct expenditures		•	•	T
		Losses to nearby businesses		•		T/P
	ROW Acquisition	Loss of jobs and services due to relocation	•			T
		Redistribution of jobs and services within the corridor		•		T
		Loss of land	•			P
	Business Growth	Expansion of existing businesses	•	•	•	P
		Attract new business and industry	•	•	•	P
	Tourism & Recreation	Expansion of existing businesses	•	•	•	P
Residential	Regional Economy	Replacement & Relocation housing needs		•	•	T
		Attracts additional workers and families		•	•	P
Tax Revenue	Property Taxes	Property value changes and associated revenue		•	•	P
	Public Service Needs	Require additional expenditure			•	P
Regional & Community	Community Region	Changes to pattern of community growth				?
		Changes to public revenue & expenditure		•		?
		Gain or loss in direct incomes	•			?
		Environmental changes				T
Resources	Energy	Consumption associated with direct, indirect and induced effects	•	•	•	P

[1]Perera, Max H.,"Framework for Classifying and Evaluating Economic Impacts Caused by a Transportation Improvement," *Transportation Research Record 1274* (Transportation Research Board, Washington, 1990), p. 48.

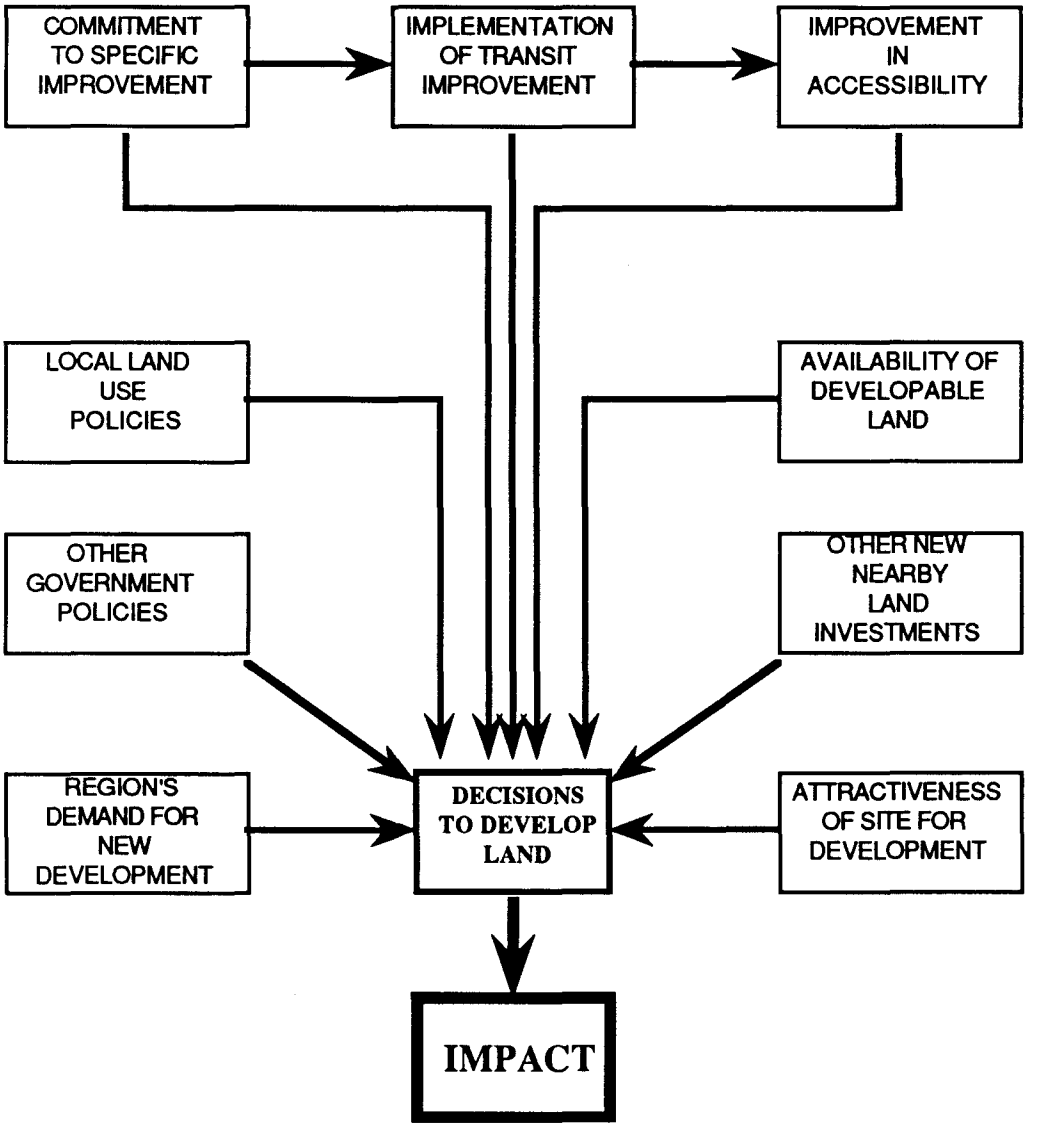

Figure 1: Factors Influencing Land Use Impacts[2]

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[2]Emerson, Donald J..,"Framework for Analyzing the Impact of Fixed-guideway Transit Projects on Land Use and Urban Development," *Transportation Research Record 1274* (Transportation Research Board, Washington, 1990), p. 151.

Current Reference List

I. Documents obtained from DART

A. *South Oak Cliff Corridor Alternatives Analysis/Draft Environmental Impact Statement* , (UMTA/DART:September 1990).
B. *New Directions for Dallas Area Rapid Transit: Transit System Plan* ,(DART: June 27,1989)
C. Various *Corridor News* newsletters (1989-1990):
   1. North Central Corridor
   2. South Oak Cliff Corridor
   3. West Oak Cliff Corridor

II. Documents From other Transit Systems

A. *San Diego Trolley Guideway Implementation Monitoring Study,* (SANDAG/UMTA, 1980-1983),in three stages:
   1. Study Area Inventory
   2. Initial Operating Stage
   3. Impact Evaluation

B. *Portland Mall Impact Study*, DOT-I-83-7,(UMTA/Center for Urban Studies, Portland State University)

C. *Building a Regional Transit System*, (Houston METRO, March 1987)

III. Other Documents currently being reviewed

A. *Transportation and Economic Development 1990,* TRR 1274, (Transportation Research Board, 1990)

B.*Economic Development, Land Use Modeling, and Transportation Requirements,* TRR 1046, (Transportation Research Board, 1985)

C. *Encouraging Public Transportation Through Effective Land Use Actions,* DOT-I-87-35, (USDOT/Seattle METRO, May 1987)

D. *Rail Transit Impact Studies*, DOT-I-82-3, (USDOT, March 1982)

E. Beemiller, Richard M., *A Hybrid Approach to Estimating Economic Impacts Using the Regional Input-Output Modeling System (RIMS II),* (US. Dept of Commerce, November 1989)

F. Texas State Comptroller
   1. Input/Output Model
   2. Employment multipliers

IV. References currently being sought and/or sent

A. *Transit Station Area Development Studies,* (Atlanta Regional Commission/ MARTA, 1984)

B. Nelson, Arthur C.,*Price Effects of Elevated Heavy Rail Facilities,* (Georgia Institute of Technology, 1991)

C. Follow-ups of earlier studies
   1. Portland Transit Mall
   2. Parts 2&3 of San Diego Study