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16. Abstract  <p>There is growing consensus about the need to be more proactive in decision making in regards to better coordinating public and private resources. One component in this way of thinking is to pursue more coordination of transit and land use under a concept termed, transit-oriented development (TOD). TOD neighborhoods tend to encourage walking, are linked very well to transit for meeting needs inside and outside of the neighborhood and provide a sense of place. The benefits of these neighborhoods are many, but include the fact that fewer automobiles are needed. Several communities are actively pursuing transit-oriented development. This report documents a TOD workshop where elements of planning, development and implementation of transit-focused communities were described. This work identifies several potential sites for transit-oriented development using Houston, Texas, as a case study. Both a bus and rail example are included.</p>					
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# **Transit-Oriented Development Workshop: Synthesis**

Carol A. Lewis, Ph.D.

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The Center for Transportation Training and Research  
Texas Southern University

*with*

Southwest Region University Transportation Center  
Metropolitan Transit Authority  
Greater Greenspoint District  
City of Houston Planning and Development Department  
Conference of Minority Transportation Officials  
Gulf Coast Institute

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## **DISCLAIMER**

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## **ABSTRACT**

There is growing consensus about the need to be more proactive in decision making in regards to better coordinating public and private resources. One component in this way of thinking is to pursue more coordination of transit and land use under a concept termed, transit-oriented development (TOD). TOD neighborhoods tend to encourage walking, are linked very well to transit for meeting needs inside and outside of the neighborhood and provide a sense of place. The benefits of these neighborhoods are many, but include the fact that fewer automobiles are needed. Several communities are actively pursuing transit-oriented development. This report documents a TOD workshop where elements of planning, development and implementation of transit-focused communities were described. This work identifies several potential sites for transit-oriented development using Houston, Texas, as a case study. Both a bus and rail example are included.



## EXECUTIVE SUMMARY

The Center for Transportation Training and Research coordinated a transit oriented development (TOD) workshop in Houston, Texas, November 16 and 17, 2001. The workshop attracted national experts, transit officials, planners, and community residents to discuss issues pertinent to transit oriented development. Attendees gained insight into TOD requirements and potential opportunities for transit oriented development in Houston. The first morning featured the national perspective and a look at the local environment regarding the topic; afternoon break sessions provided additional detail on necessary components. Participants discussed strategies to overcome funding problems, addressed private sector requirements, and examined regulatory challenges that impede transit oriented development. Key concepts noted by each speaker are synthesized in this report; in addition, powerpoint presentation, more complete texts, and supplemental information are available on the CTTR website.

Several public officials and university faculty provided the setting for the workshop by describing METRO's currently under-construction 7.5 mile light rail line, the importance of coordination between key public agencies and the risks of not viewing transportation facilities in light of the total community.

Several components are required for successful TOD as follows:

- A supportive real estate market,
- TOD compatible transit system and walk-able design,
- Community partnerships,
- Understanding of the real estate market,
- Planning elements for growing smart,
- The right mix of incentives,
- Developing a community that is a place to come back to not just to leave from,
- Easy access to transit platform from the community, and
- Connection to community from TOD.

The following serve as barriers to TOD:

- Incompatible transit system design,
- Financing difficulty,
- Community concern, and
- High developer cost and risk.

Two charettes led to the development of the recommended TOD designs for a bus transit and a light rail station.

## Next Steps: Moving Toward Implementation

Houston has an unprecedented opportunity to implement transit oriented development in concert with its 7.5 mile light rail line, and additional transit development options may be available in concert with METRO's bus transit centers. Successful TOD, especially in conjunction with the light rail line will validate the economic development potential of rail transit, provide much needed mixed-use centers for transit adjacent neighborhoods, and create much needed nodes of pedestrian activity and active public spaces. Through the bus and rail charettes, conference participants recommended, where feasible, commercial and residential uses as integral components of existing and planned transit improvements. Next steps facilitating Houston's creation of more transit-friendly environments are as follows:

- Publish a Working Definition of TOD for Houston. Establish a common vocabulary and basic design guidelines for use by METRO, City of Houston, Main Street Coalition, TIRZ's and others, so that discussion about transit oriented communities are occurring from a common frame of reference.
- Project Identification. Identify mixed-use "pilot projects" along the Main Street Corridor and in the Greenspoint TIRZ, where sufficient land can be assembled or otherwise controlled to provide for a critical mass of new development facing attractive public squares and plazas.
- Master Planning. Prepare master plans for priority pilot projects sites, including a proposed development program based on market studies, design concepts, and illustrative site plans and renderings. The proposed *area plan* concept, currently under evaluation by the City officials can serve as the foundation upon which TOD can be a central focus or one component, depending on the community perspective.
- Land Assembly. Together with community representatives, the City Planning Department, the Main Street Coalition, TIRZ's, METRO, and developers, prepare a workable approach to land assembly and control. The focus of the land assembly will be targeted TOD sites. Potential identification of financing scenarios and land banking concepts will be developed.
- Recruitment Investment Community. Prepare a list of potential real estate stakeholders, project development specialists and lending institutions from Houston and across the country, particularly those experienced in successful TOD projects.
- Designate Initial Pilot Project. Identify Wheeler-Blodgett light rail station and transit center as the first project to be embraced by the City, community, real estate professionals and Main Street Coalition. The group should work with METRO toward additional land assembly and the issuance of an RFP for a mixed-use project on the site.
- Develop Financing scenarios. Identify sources of financing and models that have been successful in other locales. Options include federal, state loans and grants, as well as the City's CIP.

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## **Transit Oriented Development Workshop November 16, 2001**

### **Background and Overview**

The Center for Transportation Training and Research coordinated a transit oriented development (TOD) workshop in Houston, Texas, November 16 and 17, 2001. The workshop attracted national experts, transit officials, planners, and community residents to discuss issues pertinent to transit oriented development. Attendees gained insight into TOD requirements and potential opportunities for transit oriented development in Houston. The first morning featured the national perspective and a look at the local environment regarding the topic; afternoon break sessions provided additional detail on necessary components. Participants discussed strategies to overcome funding problems, addressed private sector requirements, and examined regulatory challenges that impede transit oriented development. Key concepts noted by each speaker are synthesized in this report; in addition, powerpoint presentation, more complete texts, and supplemental information are available on the CTTR website.<sup>1</sup> Specific workshop goals were to:

- Identify and describe the key elements of successful transit oriented development.
- Apply the TOD elements to specific sites, using Houston as an example.
- Provide a summary of the implementation steps in the TOD process.

<b>Opening Session</b>
------------------------

Several public officials and university faculty provided the setting for the workshop by describing METRO's currently under-construction 7.5 mile light rail line, the importance of coordination between key public agencies and the risks of not viewing transportation facilities in light of the total community. Key points by each individual are as follows.

**Dr. Carol A. Lewis, Director, Center for Transportation Training and Research, Texas Southern University**

*Lewis related the history of transit center development in Houston beginning in the 1980's.* The objectives of the transit centers were to increase the number of potential destinations reachable by bus patrons. METRO focused on the rider's convenience and facilitating bus to bus transfers. Little to no thought went into interfaces between bus patrons and nearby activities, such as for shopping or services. There was no anticipated change due to the increased accessibility and potential patron base created by the bus riders. The reality is that the communities around many METRO transit centers are different than when the transit centers were constructed. For instance, new drug stores and a social service agency are across from the first transit center at Lyons and Lockwood; a drug store, major video rental store, a grocery store and social service agency are proximate to the second transit center (Southeast) near Scott and Old Spanish Trail.

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<sup>1</sup> <http://cost.tsu.edu/cttr>

Lewis noted that, regrettably, the most convenient method of movement between the stores near the Southeast Transit Center is by car. She posed the question of what might have been different if the development had been anticipated. Currently, moving between the transit center and the surrounding development on foot is particularly dangerous. Lewis stressed the importance of anticipating development around new transit facilities including the rail and bus transit centers METRO has under construction.

**Tom Rolen, P.E. Director of Public Works & Engineering, City of Houston**

*Rolen emphasized the importance of constructing the light rail transit line in the Houston urban core.* He described it as essential along with other alternate transportation. He mentioned that the area's population is expected to double. There will be positive effects of the project on the city, including \$500 million to \$1 billion in economic activity and development. METRO and the City are cooperatively working on signalization and other aspects of the system to implement a system that operates as seamlessly as possible.

**Shirley A. DeLibero, President & CEO, Metropolitan Transit Authority**

*Ms. DeLibero began her comments by explaining why Main Street was chosen for light rail.* Main Street links downtown Houston to the Texas Medical Center, three major universities, area museums, Hermann Park and the Zoo, and the Reliant Astrodome. The medical center area alone has more than 70,000 employees, 20,000 students, and 50,000 visitors every day. It has been learned from other cities' experience that the additional ridership, along with transit oriented development usually results in economic development.

Houston is short listed among US cities by the Olympic Committee; the committee was impressed with coordination among the public and private sectors in the city and with METRO shuttle capabilities, as shown by the Houston Livestock Show and Rodeo. Without the 7½ miles of rail, Houston would not have been considered for the Olympics. The next five corridors are currently under examination for high capacity investment. The light rail cars are manufactured by Siemens; station designs represent the communities along the line.

**Keynote Speaker: GB Arrington, Land Use Planning Manager, Parsons Brinckerhoff, Inc.**

*GB Arrington described TOD as transit within an easy walk in moderate to higher density areas.* A mix of uses designed for the pedestrian is the key element; an attendant increase in transit ridership usually occurs. Either new construction or redevelopment is appropriate for TOD. Arrington noted three types of development associated with transit – Transit Oriented Development, Transit Adjacent Development, and Joint Development. Transit oriented development is proximate to transit and the development is shaped by the mix of uses, density, and building orientation. In contrast, transit adjacent development is within an easy walk of transit, but development is not reshaped because of transit. Joint development refers to use of property owned by the transit agency for development; joint development is undergoing a renewed interest on the part of the Federal Transit Administration. New FTA joint venture policy advocates physically or functionally related development and the highest and best transit use.

Arrington cited Washington, D.C.'s (WMATA) transit oriented development experience as an example. There are 54 joint development and connection agreements valued at more than \$2 billion. The developments provide WMATA with \$10 million annual revenue projected to increase to between \$15 and \$17 million by 2005. An additional 25 joint development projects are in the pipeline. Arrington called TOD an effective way to manage growth. He stated that TOD must link with a community's vision, will work with bus and rail, and is suitable for large and small communities. Potentially, ridership may increase by 5% and local infrastructure cost may be reduced by 25% due to TOD.

Several components are required for successful TOD as follows:

- A supportive real estate market,
- TOD compatible transit system and walk-able design,
- Community partnerships,
- Understanding of the real estate market,
- Planning elements for growing smart,
- The right mix of incentives,
- Developing a community that is a place to come back to not just to leave from,
- Easy access to transit platform from the community, and
- Connection to community from TOD.

The following serve as barriers to TOD:

- Incompatible transit system design,
- Financing difficulty,
- Community concern, and
- High developer cost and risk.

**Panel Discussion: TOD Specific Applications and Local Perspectives**

*Moderator: Bob Eury, Executive Director, Houston Downtown Management District*

**Speaker: John Sedlak, Vice President of Planning, Engineering & Construction with the Metropolitan Transit Authority of Harris County**

*Sedlak provided an overview of the corridor describing the 7.5 mile line beginning at the University of Houston Downtown, serving Houston Community College, Hermann Park, the Texas Medical Center area, and the Reliant Astrodome complex. There is tremendous potential along the entire route including the Wheeler/Blodgett TOD opportunity given the growth projected for the corridor; for example, the Astrodome area is projected to grow 50%. The rail line ends at a METRO Park and Ride lot with 1000 – 2000 car capacity; the rail yard and shop and facility are also at this location. The light rail is supported by a regional bus system.*

Light rail offers improved flexibility and increased livability. In addition, the opportunity to host special events, such as the Olympics, Super Bowl, All-star Games, and Conventions will be enhanced. Sedlak reiterated that \$500 million to \$1 billion in

private development are anticipated in the corridor. Although in theory bus can offer a similar transit service level, private development does not usually align with a bus system. Rail is fixed and development is attracted to that aspect of a facility. When compared to bus, light rail will provide quicker boardings and alightings for patrons; rail cars will accelerate more rapidly than buses, vehicles will achieve higher speeds, and there will be longer distances between stations.

Sedlak also described METRO's 2025 Plan, which will have multiple corridors for high capacity transit; major investment studies are underway, some with TxDOT.

**Speaker: Paul Marx, Senior Economist, Federal Transit Administration**

*Marx began by asking the question, "What are some factors that interfere with joint or transit-oriented development?"* He described TOD as development within approximately 1½ miles of the transit focal point. Recognize that mixed-use neighborhoods make for an interesting walk and persons are more likely to walk to the transit station, if the walk entertains them.

Marx noted the Federal Transit Administration's (FTA) *Livable Communities Initiative* relaxed previous requirements that property purchased for development around transit facilities and with federal funds, must be physically or functionally related to transit. Marx also stated that zoning is sometimes an inhibitor to transit oriented development. He provided a sample variables checklist for TOD projects, which includes focusing on transit system design, providing attention to local concerns, encouraging transit-friendly zoning, and working with lenders to have a portfolio of financial packages. He suggested preparing separate pro forma criteria for residential, commercial, and retail uses. Additional criteria are listed below:

- Accessibility within 1500 feet of transit entrance,
- Functionality of public transportation,
- Highest and best transit use, and
- Require grantee to dispose of property at market rates.

The TOD process could be expedited by including the community for the duration and presenting varied perspectives. Local government needs to take a leading role in instituting and initiating such projects. Marx offered that if leaders would make difficult decisions to ensure rail success, there would more TOD. There are elements of exchange that can make a transit oriented development more feasible. For instance, a developer may cover the entire cost to design and build rail lines in exchange for the exclusive development rights for the acres that are serviced by the rail lines.

Marx provided several concepts of TOD as described below.

*Joint Development:* Officials in Emeryville, CA turned an old Chiron brownfield site turned into mixed-use development. The project design increased density by 60%; the financing arrangements were structured to absorb \$2.3 million in light rail cost.

*Financing Strategy:* In one case, revenue bonds were created based on parking revenues. Portions of the revenue helped support inner city revitalization. As a result, business increased because of mixed-use development. Developers helped fund cost of streetcars in exchange for increased density.

*Growth Management:* The National Home Builders' Association selected Suburban Portland as the best master planned community in the United States. The

development is anchored by mixed-use and downtown garden apartments. The density averages 6 units per acre.

**Speaker: Phyllis Jerrell, Planning Director, City of Plano**

*The City of Plano is working toward a downtown vision that enhances quality of life and provides a model for sustainable development within a maturing suburban city.* The goal is to create a compact, urban mixed-use activity center consistent with new urbanism and transit oriented development. The City's plan links surrounding neighborhoods to reinforce downtown and stimulate area revitalization

Jerrell described their approach as a "Transit Village" strategy covering 3.6 acres. The focus redevelops key sites, adding 1000 dwelling units and 50,000 square feet of retail space. Construction is anticipated from year 2000 forward. Downtown will be reinforced as an arts district. Also included is a downtown parking program and expansion of Haggard Park. A key component designates and preserves historic buildings, as well as implements streetscape improvements.

There are a series of design issues including relationship to the light rail transit platform, minimizing ground floor residential use, attention to street layout and parking, fire protection, and compatibility with historic buildings. Plano is in a relationship with DART and Amicus Partnership on the plans and projects. The structure of the collaborative is as follows:

- The City of Plano
  - Assembled property,
  - Leased the site to Amicus for 70 years,
  - Constructed all perimeter infrastructure,
  - Leased a 2000 square foot room for public functions,
  - Amended zoning to increase density, and
  - Waived park fees.
- Amicus
  - Met city design requirements,
  - Involved the public in project design,
  - Is constructing 243,000 square feet,
  - Agreed to provide additional parking,
  - Provided all debt and equity financing,
  - Accepted lease with annual increase proposition, and
  - Agreed to additional finish out allowance.
- DART (Dallas Area Rapid Transit)
  - Approved platform location and coordinated platform with Amicus project,
  - Gave the city credit for the infrastructure,
  - Purchased land for platform and project,
  - Provided the city access to land, and
  - Infrastructure credit covered land cost.

There are several lessons and observations from the City of Plano.

- Create and reinforce a broad vision.

- Secure a strong experienced development partner.
- Remain patient, flexible and resourceful in resolving problems.
- Understand city benefits are long term and primarily linked to secondary developments.

**Speaker: Ed Wulfe, President and Founder of Wulfe & Co**

*Wulfe’s comments focused on the social and political environment in Houston as the 7.5 mile light rail line is under construction.* Transit oriented development in this community must function within the city’s regulatory environment. He stated that the tools are there for METRO to proceed with joint and TOD. Political instincts and experience must merge in order to have more pedestrian-oriented communities. Wulfe stated that a critical question is whether the political will exists to make changes in the existing structures to facilitate more transit friendly development. It must be recognized that term limits may serve as a possible inhibitor to progress on the political side because the mayoral and council terms are 3 two-year terms. The frequency of the electoral cycle results in a short period to focus on the city’s policy role in enabling transit oriented development.

**Luncheon Speaker**

*Jack Drake, President and CEO, Greater Greenspoint District*

*Drake stressed involvement of small businesses in the development of a regional transportation system.* Moreover, a part of the challenge is how to get METRO to do public/private partnerships with federal funds and develop TOD’s, while simultaneously assisting small businesses affected along the light rail. Drake posed the question, “Does TOD have to be a place ‘to fall in love’ or does it provide a financial opportunity for the transit property and others?” It is important that all parties achieve consensus and sell one concept. The next steps to achieving TOD would be to develop facts that show “profitability” of TOD’s. We should learn about best practices of TOD’s around the nation and world and how this concept can be applied to Houston. Lastly, we should address some of the challenges and difficulties of doing a TOD in Houston.

**Concurrent Session 1 – Funding, Financing, and Market Incentives**

*Moderator: Patricia Rincon-Kollmar*

**Speaker: Dr. Bernard Weinstein, Director, Center for Economic Development and Research University of North Texas**

Dr. Weinstein conducted a study of the changes in property values from 1994 – 1998. At the time DART (Dallas Area Rapid Transit) had been in operation less than 2 years. A sample of 400 non-DART properties (the control group) in South Dallas formed the basis of comparison with properties near DART rail stations. Property values rose 16% from 1994 – 1998. Increases of 13% were observed from the control group; Additional information about the study is available at the Center webpage [www.unt.edu/cede](http://www.unt.edu/cede). Once arriving at the site, click "recent studies".

**Speakers: Diana Helms-Morreale, Fund Manager, Enterprise Social Investment Corporation and Lorenzo Littles- Dallas Director, Enterprise Social Investment Corporation**

The Enterprise Social Investment Corporation's purpose is to rebuild communities. The corporation works with partners to provide low-income people with affordable housing, safer streets and access to jobs and child care. They also help strengthen nonprofit organizations working in community development. A key to partially fulfilling their objective is underwriting properties and increasing the supply of affordable housing. The appeal for affordable housing is broad. For example, tax credits can yield 40% equity, the advantage is the borrower needs equity to get the project funded. Also, investors may be eligible for a CRA credit break on taxes.

**Speaker: J.J. Smith, Director Fannie Mae Houston Partnerships Office, Transit Oriented Development and Opportunities with Fannie Mae**

Smith cited an example of a TOD partnership with Fannie Mae including Chevy Chase and Howard. This project yielded 50 individual housing units and utilized transit buses as a driving tool for the development of a funding source. Fannie Mae then developed a Community Development and Housing Program. The agency has \$1 billion to lend to individual builders and companies.

**Speaker: Worley Barker, VP Small Business Solutions Group, JP Morgan Chase; "Community Oriented Financing - Funding, Financing and Market Incentives".**

Barker described five keys to accessing capital as: 1) Cash flow ; 2) Collateral; 3) Equity Capital Contribution; 4) Good Personal Credit; and 5) Management Experience. These are the criteria by which a project is measured to determine whether or not it is worthy of funding. He provided an example of \$125,000/\$100,000 which exemplifies the minimum Cash Flow Coverage of 1.25x to 1x. A minimum of \$1 for \$1 in collateral coverage is generally expected (i.e., For every dollar in loan amount, one dollar in collateral amount is expected). In addition to providing examples of Cash Flow and acceptable collateral, there is also the following example of expected Equity Capital Contribution:

\$ 30,000	30%	Owners Equity Injection
\$ 70,000	70%	Bank/Small Business Admn. Financing
\$ 100,000	100%	Total Project Cost

The minimum equity contribution for start up initiatives is 30%; existing businesses will require from 15% to 20%. Barker noted that collateral is NOT equity. Mr. Barker provided a list of financial and technical assistance resources; he also provided a sample of the type of information required when submitting an application. Both are in Appendix B.

## Concurrent Session 2 – Public Sector Requirements

*Moderator: Ken Bolton, Board Member, Metropolitan Transit Authority*

### **Barry Goodman, CEO, The Goodman Corporation**

Goodman focused his comments on the challenges of TOD. He first described transit oriented development as “development around a rail station to create added value; a rail line is used to connect and beautify the surrounding community. Through TOD, rail stations and surrounding land are used to create greater density and more economic development.” According to Goodman, several tools are available to Houston Metro to pursue TOD as follows:

- Acquisition and condemnation of property,
- Creation of a subsidiary development corporation,
- Creation of parking authority to provide joint-use parking,
- Creation of transit terminal complex, and
- Acquisition or condemnation of property for entrepreneurial development, which supports transit investments.

Goodman provided several examples of opportunities that might include leasing property for higher density retail, commercial and/or residential development. Air rights will be available above rail transit stations. METRO could exercise authority of eminent domain within 1500 feet of a station’s center and outside of the 1500 feet, if part of a master plan. Thereafter a development facility may be transferred back to a private party. Special use zoning is an option to insure density around rail stations and in combination with property and sales tax abatements would encourage new developments.

TOD’s are also supported through the Federal Transit Administration (FTA). FTA allows federal findings to support acquisition within 1500 feet of transit stations and joint development of facilities with compatible uses. Also the agency allows use of federal funding to support acquisition or condemnation of property within a 1500 foot radius of a transit terminal or station for development that generates transit usage. Examples are transit oriented parking, daycare facilities, retail uses and performing arts. Pedestrian infrastructure that improves access to transit and community is eligible for federal funds under the Livable Communities Initiative (LCI) program.

TOD’s encouragement of density is important because density creates higher property value, generates higher transit ridership, contributes to a higher sales tax base and is an efficient use of existing infrastructure.

### **Robert Litke, Director, City of Houston Planning and Development**

Litke spoke extensively about how METRO and the City of Houston need to work together to coordinate their planning in the best interests of the citizens of Houston. He emphasized that planning must be coordinated for both short-term and long-term projects. Litke said that the two agencies could leverage their resources and produce better service for the people when focusing on their common goals of efficiency and sound management. A key point by Litke is that Houston has no zoning ordinances through which to channel population growth and development to desired areas in a

proactive manner. The current system forces the government to be reactive in terms of providing services to respond to where the market has gone. He also stated that conducting business in that fashion is disjointed and does not allow a smooth, well-structured development plan. Providing city services after the fact is more costly because it may call for the condemnation of developed or residential property to run water and sewer lines to unplanned communities.

Finally, Litke remarked that the political process is not conducive for long range planning because incumbents are preoccupied with doing what is necessary to get reelected due to their two-year terms and term limits. He said that reality forces candidates to seek the path of least resistance and to focus on short-term efficiency at the expense of the long-term welfare of the people. In view of the status quo, Litke said he believed there is limited opportunity to do more long range planning so that local governmental agencies should try to do what they can to coordinate and produce positive, short-range changes to city plans and development.

### **Guy Hagstette, AIA, Director of Capital Projects & Planning, Downtown District**

Hagstette's comments focused on examples of how the public and private sectors have worked together to orient downtown Houston more completely toward transit. He stressed that "private sector" efforts have been represented by Central Houston, Inc. (a private, non-profit membership organization) and the Downtown District (a public municipal management district funded by private property owners in downtown). The role of these organizations is critical in public/private partnerships because, otherwise, private sector participation is fragmented and poorly informed. He stated that TOD assumes many forms and images, but when one considers the most fundamental characteristics that must be present to orient development to transit, downtown Houston represents the best, although still flawed, example of TOD in the region.

There are three key characteristics that allow downtown to outperform the rest of Houston and that must be present for TOD to generate real transit ridership – density, efficient access for transit vehicles, and an attractive and efficient pedestrian environment. It is important to note that bus patronage in downtown consists of two basic groups, those commuting to downtown and those transferring in downtown, but headed to other locations. Hagstette provided a historical overview of the initial downtown project development, the grant history and negotiations for joint development. He also described the project funding and on-going development.

### **Charles LeBlanc, Executive Director, Midtown TIRZ**

Several incentives would be required to encourage development as discussed in this workshop. Currently Houston area governments are laissez-faire about development. In order for TOD to be effective, the private sector will need to support more government involvement and advocate a proactive position relative to government encouraging the type and amount of development around transit.

## **Afternoon Plenary Session**

*Moderator: Carol A. Lewis*

### **Speaker: David Crossley, Director Gulf Coast Institute**

Crossley spoke of why TOD matters and what his various experiences show about smart growth initiatives. He also gave insight on what people really think about living in dense environments in comparison to the current living environments. Several recent surveys indicate residents want quality housing in areas that allow them to walk in pleasant surroundings. The suburban house that requires a car for every trip is dominant in our region and society, as a whole because that's what the market provides. Crossley also gave information concerning how the smart growth concepts and objectives affect the communities' economic development. Additional key points are as follows.

- Living in a smart growth environment is quite different from a less dense environment.
- People are more worried about traffic than they are the minor inconveniences of living in a compact environment
- The majority of people are concerned with quality of life issues such as health, safety, education and transportation

### **Speaker: Marilee Utter/Denver Regional Transportation District (RTD)**

Ms. Utter began by describing the background of RTD. The RTD started with the 16th Street Mall Bus System; Denver's downtown is a long and narrow retail core. A Mall Shuttle that started in 1982, 20 years ago is very successful. The central rail corridor first opened in 1995. The southwest corridor opened last summer and was an extension to the southwest area of the city, which was not the most populated, but had the least expensive land acquisition costs. Another line, Central Plat Valley, will open in the spring of 2002. This extension will link with an entertainment area. Lastly, the southeast corridor is the newest expansion; it is a 5 year construction, \$1.6 billion project that links the two employment centers.

There was a lot of controversy in Denver, when the light rail systems started. Just like Houston, Denver could not get federal funds, so local funds were identified. She posed the question, "What does it take to get a good TOD done?" Ms. Utter focused on fifteen important variables to implement successful TOD.

1. Everyone must have a common vision .
2. You cannot make a market, if you don't have one, just wait until the market is there.
3. Land is needed for TOD placement.
4. The physical site must be realistic.
5. A private sector sponsor is required to provide leadership. (e.g., landowners, smart growth, advocates or a public sector sponsor).
6. Political will must be present from the local jurisdiction.
7. Mixed use is illegal to build in zoned communities.
8. Money, capital and private sector interest and commitment.
9. Finding local examples is hard.

10. Hold off before development for the right vision. If you make a mistake, you will look at it for 50-60 years. It is almost better to not build at all, than to build the wrong thing.
11. Get to the right developer and develop a great design.
12. Do not build TOD on a tight budget.
13. Find patient capital (not desiring a rapid payback).
14. Do not fund from up front (It is easier on cheaper ground)
15. Low grade parking is better.

## Summary of Charrette Outcomes

### Rail Charrette

There was in-depth discussion about the layout and design of the bus interface at the Wheeler/Blodgett station. In specific, the following summarizes the discussion. *There was general consensus that the preferred location for bus bays is linear along perimeter streets, in contrast to interior to the block (See Figure 1).* The rationale is that:

- a. Valuable joint development space will be unavailable due to the present siting of the bus bays.
- b. Fumes emitted from the buses may reduce the value of the interior property, as well as airspace, especially if a ceiling or roofing were to cover the bus bays, making way for a high rise on the site.
- c. Perhaps, bus time and maneuvers could be reduced if buses remain on parallel streets.
- d. The area under US 59 could be investigated for bus layovers and stub-ended routes, if this has not yet been considered.
- e. Marilee Utter, the TOD specialist from Denver noted in her presentation, that on-street locations are better for buses collecting and discharging passengers. (At the time, we didn't know this issue would arise on Saturday, so no one questioned her about the rationale).

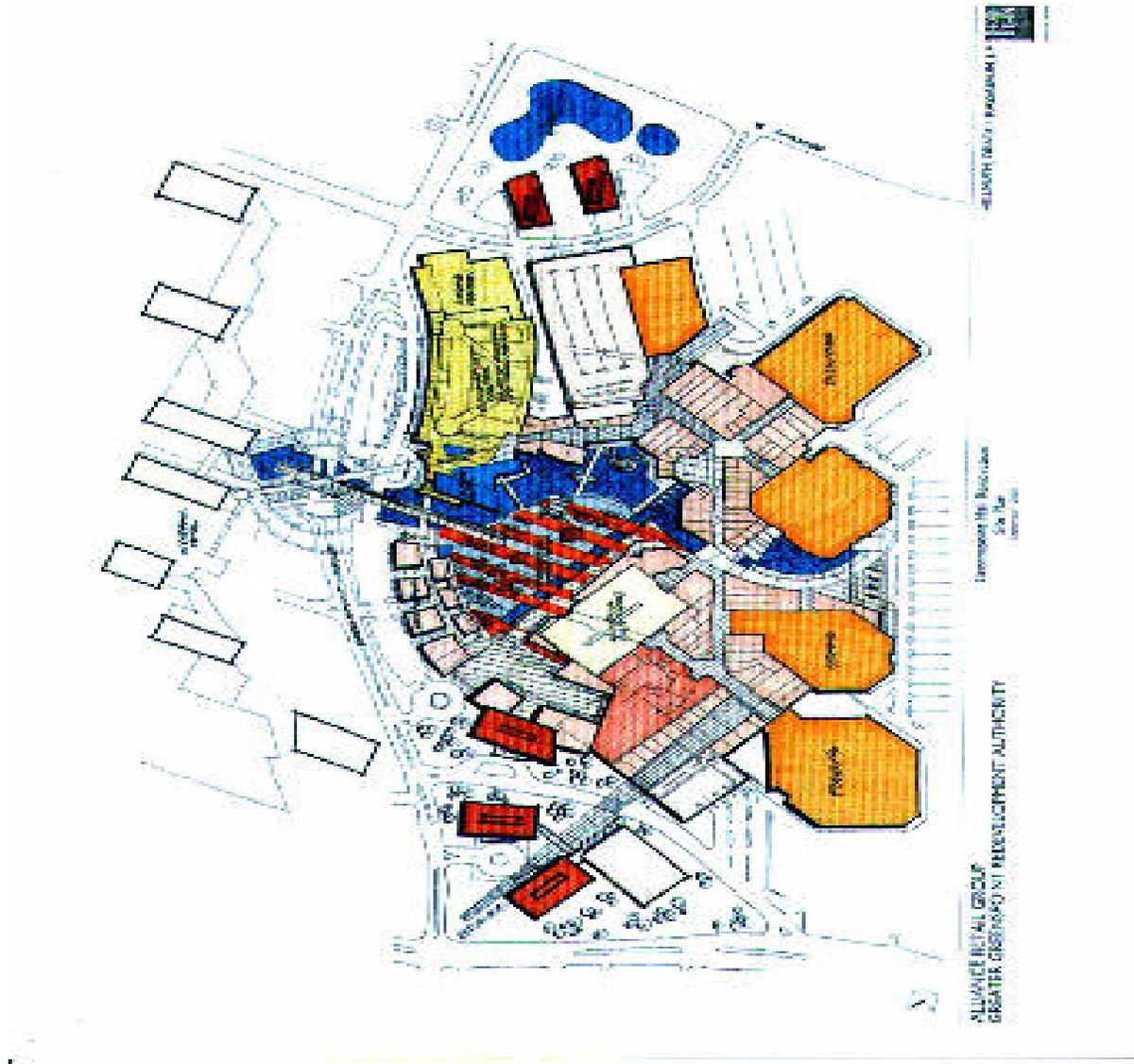


**Bus Charrette**

Attendees agreed that the Greenspoint Mall site would be better served with interior streets and a mixed-use concept (See Figure 2). A key component included housing on the mall property. A scenario similar to the recommended design of the Greenspoint Mall is in progress in Denver and was described by Marilee Utter. The rationale for the recommendations is as follows:

- a. TOD would best be facilitated by having a residential area to support the transit system.
- b. Transit adjacent development is likely without attention to ensure a transit-friendly orientation.
- c. A mixed-use concept would encourage patronage from pedestrians and bicyclists.
- d. An attractive and convenient design would enhance the community's quality of life.

Figure 2: Preferred Greenspoint Mall Design



After the TOD conference the mall ownership, Alliance Retail Group, received a briefing on the recommendations of the conference. Alliance also conducted a design charrette in

conjunction with the Greater Greenspoint Redevelopment Authority in May, 2002 that further refined the concepts for the redevelopment of the Mall site. Their consensus plan is reflected below.

Figure 3. Revised Greenspoint Mall Development Plan



### Next Steps: Moving Toward Implementation

Houston has an unprecedented opportunity to implement transit oriented development in concert with its 7.5 mile light rail line, and additional transit development options may be available in concert with METRO's bus transit centers. Successful TOD, especially in conjunction with the light rail line will validate the economic development potential of rail transit, provide much needed mixed-use centers for transit adjacent neighborhoods, and create much-needed nodes of pedestrian activity and active public spaces. Through the bus and rail charettes, conference participants recommended, where feasible, commercial and residential uses as integral components of existing and planned transit improvements. Next steps facilitating Houston's creation of more transit-friendly environments are as follows:

- Publish a Working Definition of TOD for Houston. Establish a common vocabulary and basic design guidelines for use by METRO, City of Houston, Main Street Coalition, TIRZ's and others, so that discussion about transit oriented communities are occurring from a common frame of reference.
- Project Identification. Identify mixed-use "pilot projects" along the Main Street Corridor and in the Greensoint TIRZ, where sufficient land can be assembled or otherwise controlled to provide for a critical mass of new development facing attractive public squares and plazas.
- Master Planning. Prepare master plans for priority pilot project sites, including a proposed development program based on market studies, design concepts, and illustrative site plans and renderings. The proposed *area plan* concept, currently under evaluation by the City officials can serve as the foundation upon which TOD can be a central focus or one component, depending on the community perspective.
- Land Assembly. Together with community representatives, the City Planning Department, the Main Street Coalition, TIRZ's , METRO, and developers, prepare a workable approach to land assembly and control. The focus of the land assembly will be targeted TOD sites. Potential identification of financing scenarios and land banking concepts will be developed.
- Recruit Investment Community. Prepare a list of potential real estate stakeholders, project development specialists and lending institutions from Houston and across the country, particularly those experienced in successful TOD projects.
- Designate Initial Pilot Project. Identify Wheeler-Blodgett light rail station and transit center as the first project to be embraced by the City, community, real estate professionals and Main Street Coalition. The group should work with METRO toward additional land assembly and the issuance of an RFP for a mixed-use project on the site.
- Develop Financing scenarios. Identify sources of financing and models that have been successful in other locales. Options include federal, state loans and grants, as well as the City's CIP.

## **Appendix A WORKSHOP SPEAKERS AND PANELISTS**

Biographical information is contained herein for each person on the workshop program.

**GB Arrington** is Parson Brinckerhoff's most senior practitioner in the field of linking transit and land use. For the last 20+ years G.B. has played a key role in the Portland region's innovative experiment to reinvent the American dream of a livable community by marrying transportation and land use. He was asked by the White House to organize and moderate former Vice President Gore's first Livable Communities roundtable and has served as an advisor to the Federal Transit Administration and communities from San Juan, Puerto Rico to Perth, Western Australia interested in growing smart.

**Worley Anthony Barker** is Vice President with The Chase Manhattan Bank in the Small business solutions group. Worley has played a vital part in Chase Manhattan Bank's continued growth and success in providing capital to minority & women owned businesses.

**Ken Bolton** is a member of the METRO Board of Directors and serves as an Assistant Professor at the College of Biblical Studies in Houston. He teaches community development planning and finance to faith leaders throughout the Houston area. His company, Ken Bolton & Associates, LLC, is engaged in housing development and exporting to Africa. Ken began his career as a systems analyst with Rockwell International, Aerospace Systems Group. Later, he spent 20 years as a senior Federal executive in Washington, D. C. before returning to Houston.

**Dock Burke** directs the Southwest Region University Transportation Center at Texas Transportation Institute, Texas A & M University System. In addition SWUTC responsibilities, Burke serves as a senior research economist, he also coordinates the activities of regional divisions. In his research career at the institute, he has served as the study supervisor or co-supervisor of over 50 research projects, authored or co-authored 90 research reports and papers and has made over 60 presentations on a wide variety of transportation related issues. He is the 1998 recipient of TTI's prestigious TTI/ Trinity/ Career achievement in research award.

**David Crossley**, President and founder of Gulf Coast Institute focuses on urban growth issues as they relate to the economy, community, and environment. The Institute is the leader of the Livable Houston/Smart Growth Initiative in the Houston Gulf Coast region. The institute's 1000 Friends of Houston program launched the current initiative toward a new comprehensive plan for the City of Houston. His involvement in community affairs has been extensive for the last twenty years. He served from 1996-2000 as President of the Citizens' Environmental Coalition and remains on the board of that organization as

treasurer. He was the founder of the Houston Environmental Center, which provides office and meeting space for many quality of life non-profit organizations.

**Shirley A. DeLibero** assumed the title President and Chief Executive Officer of Metropolitan Transit Authority of Harris County (METRO) on January 11, 1999. METRO operates a fleet of 1,400 buses; serves approximately 3,000 route miles, crisscrossing a 1,281 square-mile area; 3,500 employees and a budget exceeding \$605 million. Ms. DeLibero also is Chair of the American Public Transit Association APTA - the first African-American woman to hold the industry's highest honorary post. At the request of former President Bill Clinton, she represented the transit industry by serving on the Senior Advisors Group to the former President's Council on Year 2000 Conversion.

**Jack Drake** is President and CEO of the Greater Greenspoint Management District and the Greater Greenspoint Redevelopment Authority. The district was created by the state legislature in 1991, at the request of commercial property owners and is funded through their assessments to provide services and improvements to ensure Greenspoint's growth and prosperity.

**Robert M. Eury** is currently President of Central Houston, JMC., a private, non-profit corporation, formed to lead the planning and implementation of the redevelopment of Houston's central City area--principally downtown. Mr. Eury is also the Executive Director of the Houston Downtown Management District, a special assessment district within downtown Houston. Mr. Eury was Vice President and Director of Research Development for Rice Center prior to starting Central Houston in 1983. During his nine years with Rice Center, his research focused on: land use/transportation joint development, urban services delivery, development regulation, and environmental design.

**Barry Goodman** is the Chief Executive Officer of The Goodman Corporation, which he founded in 1980. The Goodman Corporation is a transportation consulting firm specializing in assisting public and private clients in the planning, financing and implementing of mobility and public transportation projects.

**Guy Hagstette, AIA**, is currently Director of Capital Projects and Planning for the Houston Downtown Management District (HDMD), a municipal management district which began providing services within downtown in 1992. In his work, Mr. Hagstette concentrates on long range planning, short-term improvement projects, residential issues, and coordination with government agencies and private entities on projects affecting the future of downtown. He is a registered architect and practiced architecture and urban design in the private sector prior to joining HDMD in 1992. Through Team HOU, he was responsible for the design and implementation of Sesquicentennial Park along Buffalo Bayou in downtown's Theater District. Mr. Hagstette holds a Master of Architecture in Urban Design from Harvard University (1981 - with Distinction) and a Bachelor of Architecture from the University of Texas at Austin (1979 - with Highest Honors).

**Phyllis M. Jerrell**, AICP, is the Director of Planning for the City of Plano. The department administers the city's neighborhood planning, development review, long-range Planning, Community Development Block Grant and GIS programs Ms. Jarrell holds a bachelors degree in cultural studies from the University of Tennessee, and a masters degree in City and Regional Planning from The Ohio State University. She has been with the city of Plano for 17 years.

**Dr. Joseph Jones** serves as Associate Provost for Research, Dean of the Graduate School at Texas Southern University. He is also a professor of Biology and holds the distinction of Fulbright-Hays Professor - University of Science and Technology, Ghana, West Africa. Jones has done post-doctoral study in several areas including Computer Image Processing and Biotechnology for Genetic Engineering and Institute in Radiation Biology. His major publications and papers are numerous and are concentrated in the areas of biology and biotechnology. Jones is responsible for several key campus publication including *Faculty Resources Catalog*, *Faculty Research Journal*, *Faculty Research Newsletter*, and *Graduate Student Research Bulletin*.

**Carol A. Lewis** is an Associate Professor in Transportation Studies and Director of the Center for Transportation Training and Research at Texas Southern University. In this capacity, she is responsible for educating students in fundamentals of transportation and urban transportation issues, as well as conducting operational and policy related transportation research. Since joining the Texas Southern University faculty in 1992, she has conducted research for the Texas Department of Transportation, FHWA, Port of Houston, METRO, and other public and private organizations.

**Lorenzo Littles** joined The Enterprise Foundation as the Director of its Dallas office in the fall of 1997. Throughout his career he has held a variety of legal and management positions including serving as:

- A management consultant with ARP, Inc. of Chicago, Illinois;
- A two year tenure as Chief Operating Officer for United States Senator Carol Mosely-Braun;
- Two years as a Staff manager for the Regulatory Department of Ameritech Illinois; and
- Five years as a Project Manager for the Real Estate Department of Illinois Bell Telephone Company.

**Patricia Rincon-Kollman** is an Assistant Director with the City of Houston Planning and Development Department. She is responsible for Long Range Planning functions for the department including long-range studies in transportation, economic analysis and demographics and the City's management of the Main Street Corridor Revitalization Project. Rincon-Kallman has been with the City for 12 years. She holds a Master's Degree in Urban and Regional Planning and Community Development from the University of Colorado and has over 20 years of experience in planning, including comprehensive/long range, operational, transportation and neighborhood planning, as well as economic development. While in Colorado, she served on the Planning Commission for the City of Aurora. She has made many presentations on various

planning topics at National Planning conferences, is a HUD fellow and has received various planning awards during her tenure with Houston and while working in other cities.

**Paul Marx** is a senior economist, responsible for writing FTA's Joint Development and Innovative Financing policies. He has been with the FTA since 1990, when he was brought on board to implement the Innovative Financing Initiative. Since joining the Office of Policy Development, Mr. Marx has been involved in updating the Joint Development policy, part of which was incorporated in TEA-21; implementing the Transportation and Community and System Preservation pilot program (TCSP); designing and implementing the Transportation Infrastructure Financing and Innovation Act (TIFIA, a \$10 billion loan program), as well as participating in or organizing Rail~volution conferences.

**Thomas (Tom) J. Rolen** is the Director of the Department Public Works and Engineering of the City of Houston. As such, he has personal charge of 3,900 City employees and is responsible for the operation and maintenance of the City's infrastructure and Capital Improvement Program that totals \$500 million for FY2000. Prior to his Director position, Mr. Rolen served the City as Deputy Director in charge of the Maintenance and Right-of-Way Division. In that capacity, he implemented various programs to upgrade the level of service of the Division, coordinated and implemented the Texaco Grand Prix, served as a member of the Leadership Team at TranStar, provided input to the Mayor on various issues, and coordinated the City's ongoing efforts with the NPDES storm water permit. Mr. Rolen's civil engineering career spans more than 25 years.

**John Sedlak** is the Vice President of Planning, Engineering & Construction with the Metropolitan Transit Authority of Harris County, Texas. His primary responsibility is to develop the transit system for the Houston region, including the coordination of transit system service and capital programs. This responsibility includes the engineering design, project management and construction of fixed facilities, which include light rail, HOV lanes, transit centers, park & ride lots, general mobility roadway projects, and all operating and maintenance facilities. He is also responsible for the short and mid-range planning, programming, scheduling and evaluation of transit services; as well as directing the community outreach activities and coordination with elected officials at all levels of government.

**James J. Smith** is Director of Fannie Mae's Houston Partnership Office, a position he has held since January of 1996. His primary responsibility is managing "House Houston," Fannie Mae's 5-year \$3.8 billion investment partnership with the City of Houston to increase homeownership and affordable rental housing opportunities for low, moderate and middle-income families.

**Marilee Utter** is the Transit Oriented Development Specialist for the Denver Transportation Authority District. She is responsible for bringing land transportation, and fostering transit villages.

**Bernard L. Weinstein** is director of the Center for Economic Development and Research and a professor of applied economics at the University of North Texas in Denton. The Center was established in 1989 to provide economic analysis and consulting services to university constituents in the private, non-profit, and public sectors. He also serves as director of the Institute of Applied Economics, which offers masters degree program.



## **Appendix B**

### **SUPPLEMENTAL INFORMATION FROM WORLEY BARKER**

#### **SOURCES FOR LOANS AND OTHER FINANCIAL ASSISTANCE**

- 1) Houston Small Business Development Corporation. Business Technology Center, 5330 Griggs Road, Houston, Texas 77021 713-845-2400/fax-713-641-3853 Contact: Ask for Small Business Representative.
- 2) University Of Houston Small Business Development Center. 1100 Louisiana, Suite 500, Houston, Texas 77002 713-752-8400/fax-713-756-1500 Contact: Mr. James Evans.
- 3) North Harris College Small Business Development Center. 2700 W. W. Thorne Drive, Houston, Texas 77073-3499 713-591-9374/fax-713-591-9324 Contact: Ask for a Representative.
- 4) The Sba/Score. 8701 Gessner, Suite 1200, Houston, Texas 77074 713-773-6500 or 6549 Contact: Ask for a SCORE Representative.
- 5) Houston Minority Business Development Center. 2900 Woodridge-3rd Floor, Houston, Texas 77087 713-784-1181 Contact: Mr. Milton Thibodeaux.
- 6) The Corporation For Economic Development Of Harris County. 3100 Timmons Lane, Suite 222 Houston, Texas 77027 713-840-8804/fax-713-840-8806 Contact: Ms. Valerie Boudreaux-Allen.

#### **Key Components of Application Package**

Completed personal financial statement (Must include spouse's information as well) Itemize the use of the loan proceeds Detailed Business Plan (Start-Up Businesses Only or Clear explanation of the business, its products and/or services Describe any additional collateral and its market value (i.e. real estate, inventory, equipment) Cash flow projections for the first two years of operations (on a monthly basis) Personal tax returns for the last three years for each (20% or more) owner Statement of Personal History - Form 1919 (required on anyone whom will own 20% or more of the company) Resume of anyone owning (20% or more) of the business. Source of equity injection (equity needs to be a minimum of 30%)



## Appendix C

### LITERATURE REVIEW

Cervero, Robert and Michael Bernick. **Transit Villages in the 21st Century**. San Francisco: McGraw-Hill, 1997.

This comprehensive study of transit-oriented development (TOD) provides historical perspectives on TOD, analyzes the conditions necessary for TOD, and presents case studies of transit-supportive projects both in the United States and abroad. U.S. case studies include the San Francisco BART system, the Washington D.C. Metro, and transit villages near the Los Angeles and San Diego light rail systems. The study includes good summaries of major research on the relationship between land uses, density, market trends, and transit ridership. Case studies provide thorough background on specific TOD projects and include representative site plans and photographs.

Cervero, Robert; Carlos Castellanos; Wicaksono Sarosa; and Kenneth Rich. **Land Use and Development Impacts in BART @ 20 Series**. Berkeley: University of California Transportation Center, 1995.

This study updates the 1978 BART Impact Study and analyzes the changes in land use and development around BART stations in the San Francisco Bay Area over a 20 year period. The analysis traces the changes in the square feet of space by major land use category along each segment of the BART system. Changes in developed square feet were traced over time, and they were compared across different station types. Land use and development trends were also compared between BART stations and freeway interchanges.

Cervero, Robert; Peter Hall; and John Landis. **Transit Joint Development in the United States**. Berkeley: University of California at Berkeley, Institute of Urban and Regional Development, August 1992.

This report provides historical perspectives on joint development around transit stations, profiles of current joint development programs, and recommendations for creating ideal joint development processes. Includes a survey of joint development programs in the United States, as well as statistical analysis of the square feet of development attributable to joint development at various transit stations.

Dyett, Michael V. Site Design and Its Relation to Urban Form. (Proceedings of the Conference, "Transportation, Urban Form, and The Environment," Beckman Center, Irvine, California, December 9-12, 1990) **Transportation Research Board Special Report #231** (1991) 117-126.

This conference resource paper focuses on site design and its relationship to urban form and transportation. From the site planning and design perspective, the challenge is to heighten awareness of how different transportation solutions can be incorporated into physical plans for new residential, commercial, and industrial development. Local streets also need to be planned to be more than just automobile oriented. Provision for pedestrians, bus routes, and, where appropriate, rail transit needs to be

made early in the planning process. This will require rethinking traditional subdivision design and layout of nonresidential areas. Research needs in this area are identified.

Landis, John and David Loutzenheiser. **BART Access and Office Building Performance in BART @ 20 Series**. Berkeley: University of California Transportation Center, 1995.

This report analyzes the four BART stations in downtown San Francisco in order to determine whether major office building within 1/4 to 1/2 mile of the stations are renting at premium prices. The findings indicate no gradient, but limitations on office construction and a strong economy partly contributed to the lack of a rent gradient. The study updates price and rent analysis conducted for the 1978 BART Impact Program, although it does not look beyond downtown San Francisco and it does not distinguish Class A from other types of office space.

Loukaitou-Sideris, Anastasia. "Transit-oriented Development in the Inner City: A Delphi Survey". **Journal of Public Transportation**. CUTR, University of South Florida.

This study presents the results of a three-round Delphi survey that focused on issues and opportunities related to transit-oriented development (TOD) in U.S. inner cities. The survey queried a panel of 25 experts about the various goals and objectives of the practice of TOD, as well as the preconditions and constraints surrounding such development in economically disadvantaged areas of the inner city. Starting from a wide range of responses, the panel was eventually able, through the Delphi process, to focus on specific issues and propose a concrete set of strategies for the implementation of TODs.

The panel found five major impediments to implementing TOD around inner-city stations:

- 1) disinterest of the private sector to locate and invest in the inner city;
- 2) absence of a market demand from the part of the public that can afford to pay the arguably higher cost entailed in a mixed-use development;
- 3) competitive disadvantage of the inner city;
- 4) preconceived prejudices regarding inner-city locations.

Participants were asked to outline proposals that can help counteract these barriers that TODs face in inner city environments. A few proposals of participants are as follows:

#### **Inducing Private Sector Interest**

Panelists felt that developers will be attracted if the cost of development is effectively lowered. Development of inner-city sites often requires added costs for land assembly and for clearance of toxic pollutants from the soil. Mixed-use developments are more expensive because the cost of code compliance is greater than in conventional single use projects.

#### **Building Market Demand for TOD Housing**

A preliminary market research could help identify market needs and impediments. Market research should identify the demands in rental and for-sale housing and match the proposed development to the economic realities.

#### **Reducing the Competitive Disadvantage**

Inner cities' competitive disadvantage is exacerbated by public policy. As one participant explained, the public sector should "create a more balance playing field through land-use policy and other pricing mechanisms so that TOD can become competitive to ex-urban development, which is perceived as having "lower risk and cost."

#### **Addressing Preconceived Prejudices**

The absolute need to demonstrate success in inner city TOD was stressed by many panelists as a means to address fear and skepticism.

#### **Ensuring Financing**

Redlining has historically plagued inner city areas. But this problem can now be seen as an opportunity because banks now have new requirements to show lending

Metropolitan Transportation Commission. "Land Use and Urban Development Impacts of BART in BART Impact Program". Prepared by John Blayne Associates and David M. Dorn-busch & Co. Oakland: Metropolitan Transportation Commission, 1978.

This study provided the first comprehensive analysis of the impacts of transit on urban development for San Francisco's BART, the first urban rail project in the United States after World War II. The analysis includes statistical studies of construction activity, price and rent changes, and retail sales. Also, surveys were conducted in order to determine whether BART had any influence on the location decisions of workers, households, or employers, or on shopping patterns. Parts of the statistical analysis have been updated in subsequent studies.

Snohomish County Transportation Authority. **A Guide to Land Use and Public Transportation for Snohomish County, Washington**. v. 1&2. Lynnwood, Washington: Sno-Tran, 1991.

This first volume of this two-volume series establishes a framework for tailoring land use to public transportation networks. The document presents a set of criteria to judge compatibility of land use with transit, as well as model community plan goals and policies to encourage such development. It also describes how to achieve compatibility through zoning ordinances, transportation management plans or requirements, the design of residential subdivisions, and site design for other types of plans or requirements. The second volume includes case studies of exemplary transit-oriented development (TOD) and illustrations of good prototypical development. The report includes a series of worksheets to assist readers in establishing whether development projects are compatible with public transportation.

Transportation Research Board, National Research Council.: "Transit and Urban Form, v. 1&2". **Transit Cooperative Research Program Report 16**, Prepared by Parsons Brinckerhoff Quade & Douglas. Washington D.C.: National Academy Press, 1996.

This two-volume report analyzes the connection between land use and light rail transit ridership, provides guidelines for land use planning along light rail corridors, and looks at case studies of TOD throughout the United States and abroad. Guidelines

are mostly conceptual, implementation measures discussed only briefly. Case studies provide general background on planning concepts and how concepts are linked to transit demand.

Tri-County Metropolitan Transportation District of Oregon. **Planning and Design for Transit Handbook: Guidelines for Implementing Transit Supportive Development.** Portland: Tri-Met, 1996.

This report uses prototypes of development to show how site plans can be made transit-supportive and pedestrian-friendly. Guidelines are discussed with the help of photographs taken within the region. Illustrations compare “typical” plans with plans that are “revised” to serve transit and pedestrians.

## **Appendix D**

### **ADDITIONAL REFERENCES**

#### **Transportation Statistics**

1. Bureau of Transportation Statistics. Directory of Transportation Data Sources. 1996.
2. Bureau of Transportation Statistics. National Transportation Statistics. Sept. 1993.
3. Bureau of Transportation Statistics. National Transportation Statistics. 1996.
4. Bureau of Transportation Statistics. Transportation Statistics Annual Report. 1996.
5. United States Department of Transportation. Bureau of Transportation Statistics Directory of Transportation Data Sources. 1993.
6. United States Department of Transportation. Travel Behavior Issues in the 90's, prepared by Alan E. Pisarski. July 1992.

#### **Transit Oriented Development**

##### *General References*

1. Cervero, Robert. America's Suburban Centers: The Land Use-Transportation Link. Boston: Unwin Hyman, 1989.
2. ECO Northwest. A Framework for Developing and Evaluating Policies to Influence Transit Ridership and Urban Form. 1991.
3. Nelessen, Anton and Linda Howe. Flexible Friendly Neighborhood Transit: A Solution for the Suburban Transportation Dilemma.
4. Snohomish County Transportation Authority. A Guide to Land Use and Public Transportation. December 1989.
5. United States Department of Housing and Urban Development, Office of Policy Development Research. Encouraging Infill Development: A Guide for Local Government. July 1981.
6. United States Department of Transportation. Encouraging Public Transportation Through Effective Land Use Actions. May 1987.
7. Urban Transportation Program, Departments Of Civil Engineering and Urban Planning. Transit and the Polycentric City. September 1981.

#### **Joint/Transit-Supportive Development**

1. Alderson, SR and Stephanedes, YJ. "Transportation Corridor Strategies and Land Use," American Society of Civil Engineers Journal of Transportation Engineering v. 112 n.1 (January 1986) 15-28.
2. Cervero, Robert; Peter Hall; and John Landis. Transit Joint Development in the United States. Berkeley: University of California Transportation Center. August 1992.
3. Federal Transit Administration. Transit-Supportive Development in the United States, prepared by Robert Cervero. December 1993.
4. National Council for Urban Economic Development. Moving Towards Joint Development The Economic Development Transit Partnership. August 1989.
5. Southern California Rapid Transit District. Joint Development and Value Capture Potential in the Harbor Freeway Corridor, prepared by Blayne Dyett. May 1981.

6. Urban Land Institute. Joint Development: Making the Real Estate-Transit Connection. 1979.
7. Urban Mass Transportation Administration. Joint Development: A Handbook for Local Government Officials, prepared by Public Technology, Inc. September 1983.

#### **TOD Guidelines**

1. Association of Bay Area Governments. Making Better Communities by Linking Land Use and Transportation. April 1997.
2. City of Portland Bureau of Planning. Central City Developer's Handbook. July 1992.
3. Federal Transit Administration. The Impact of Various Land Use Strategies on Suburban Mobility. December 1992.
4. Federal Transit Administration. Transit-Based Residential Development in the United States: A Review of Recent Experiences. March 1994.
5. Metropolitan Transportation Commission. Moving Toward More Community-Oriented Transportation Strategies for The San Francisco Bay Area: A Resource Guide. Dec. 1996.
6. Snohomish County Transportation Authority. Creating Transportation Choices Through Zoning. October 1994.
7. Urban Mass Transportation Administration. Guidelines for Transit-Sensitive Suburban Land Use Design. July 1991.

#### **Rail Transit Impact Studies**

1. Metropolitan Transportation Commission. The Impact of BART on Land Use and Urban Development, prepared by John Blayney Associates and David M. Dornbusch & Co. 1978. (multiple volumes)
2. Metropolitan Washington Council of Governments. Metrorail Station Area Planning: A Metrorail Before and After Study Report. 1983.
3. United States Department of Transportation. Catalog of Transit Station Impact Case Studies. August 1983.
4. United States Department of Transportation. Land Use Impacts of Rapid Transit. August 1997.

**Appendix E**  
**TOD RELATED WEBSITES**

*Transit-Oriented Development*

[www.todcommunities.org/](http://www.todcommunities.org/)

[www.peak.org/~jbs](http://www.peak.org/~jbs)

[www.metrokc.gov/kcdot/alts/tod/todinex.htm](http://www.metrokc.gov/kcdot/alts/tod/todinex.htm)

[www.stationfoundation.org/tod.htm](http://www.stationfoundation.org/tod.htm)

*Smart Growth*

[www.smartgrowth.org/information/aboutsg.html](http://www.smartgrowth.org/information/aboutsg.html)

[www.ci.austin.tx.us/smartgrowth/](http://www.ci.austin.tx.us/smartgrowth/)

*Transit Villages*

[www.adpsr-norcal.org/adpsr/menu/news/bulletin/features/transitvillages.htm](http://www.adpsr-norcal.org/adpsr/menu/news/bulletin/features/transitvillages.htm)

[www.unc.edu/~booma/plan241/page4.htm](http://www.unc.edu/~booma/plan241/page4.htm).

*Sustainable Development*

[www.sustainable.doe.gov/overview/ovintro.shtm/](http://www.sustainable.doe.gov/overview/ovintro.shtm/)

<http://sdnp.delhi.nic.in/>

[www.colby.edu/personal/t/thtieten/sustain.html](http://www.colby.edu/personal/t/thtieten/sustain.html)



**Appendix F**  
**WORKSHOP STEERING COMMITTEE**

**Steering Committee Members**

Carol A. Lewis	Texas Southern University-CTTR
Khosro Godazi	Texas Southern University-CTTR
Sharon A. Boxill	Texas Southern University-CTTR
David Crossley	Gulf Coast Institute
Victoria Herrin	City of Houston-Planning and Development
Cyndi Robinson	METRO
Kent Hadnot	Third Ward Redevelopment CDC
Kim H. Slaughter	LKC, Inc.
Tina Araujo	Greater Greenspoint Development
Ken Bolton	K. Bolton Association
Gwen Fedrick	METRO Small Business Development
Peter Brown	Civic Design
James Vick	Knudsen (Planners) and Associates