

**T-REX Transit Oriented Development
Lessons Learned Report**

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Regional Transportation District

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Perspective:

When FasTracks passed in November 2004, a lot of attention was directed to the T-REX project for understanding the dynamics that occurred in the planning and development of TODs associated with the 14 total LRT stations. With FasTracks proposing about 55 new LRT stations into the eight county area along 119 miles of rail track, it was logical to ask what lessons could be learned from T-REX that could be applied towards benefitting this new major endeavor. Bill Sirois with RTD, Catherine Cox-Blair with the City and County of Denver and Jerry Jaramillo with Kiewit Construction met to strategize how to acquire such valuable information from key stakeholders of the T-REX project. It was decided to develop and disseminate a survey to those select stakeholders, accumulate and assess the information collected then conduct a workshop to discuss the results. The process proved extremely valuable. The data assembled provides an excellent foundation toward better planning and implementation of TODs for the FasTracks corridors. The result of this partnering effort between both the public and private sector is the information shared in this report.

INTRODUCTION

The Transportation Expansion Project (T-REX) was the largest multi-modal transportation infrastructure project in the history of Colorado. By many measures, T-REX was immensely successful: it was completed ahead of schedule and within budget, it marked the first occasion in the nation when a regional transit agency and a state department of transportation agreed to share responsibility for a transportation project, and it helped create public sentiment for passage of the FasTracks ballot initiative in 2004.

The T-REX project coincided with an immense amount of real estate development occurring along the corridor. This was not surprising considering that the Southeast Corridor connects the two major employment centers in the Denver metro area: the downtown Denver Central Business District, and the Southeast Business District, which includes the Denver Tech Center, Greenwood Village, Inverness, Meridian, and the city of Centennial. According to the Denver Regional Council of Governments (DRCOG), more than 180,000 people work in these two employment centers, and another 30,000 or so work along the corridor, including businesses along Colorado Boulevard, Evans Avenue, and University Boulevard. Forecasters expect downtown and the Denver Tech Center to continue to grow during the next 20 years.

The development projects along T-REX have often been described as transit-oriented development (TOD). In general, TOD has the following (but not all) development principles: it has a functional relationship to transit, usually expressed through a strong pedestrian orientation in contrast to the auto-dominated orientation of sprawl-pattern development; it is more compact and denser than adjacent development; it has a mix of uses that provide for 18-hours of human activity. The influence area of TOD usually extends to a radius of one-quarter to one-half mile (a 5- to 10-minute walk) from a transit facility, depending on the context of the surrounding environment.

Purpose of Report

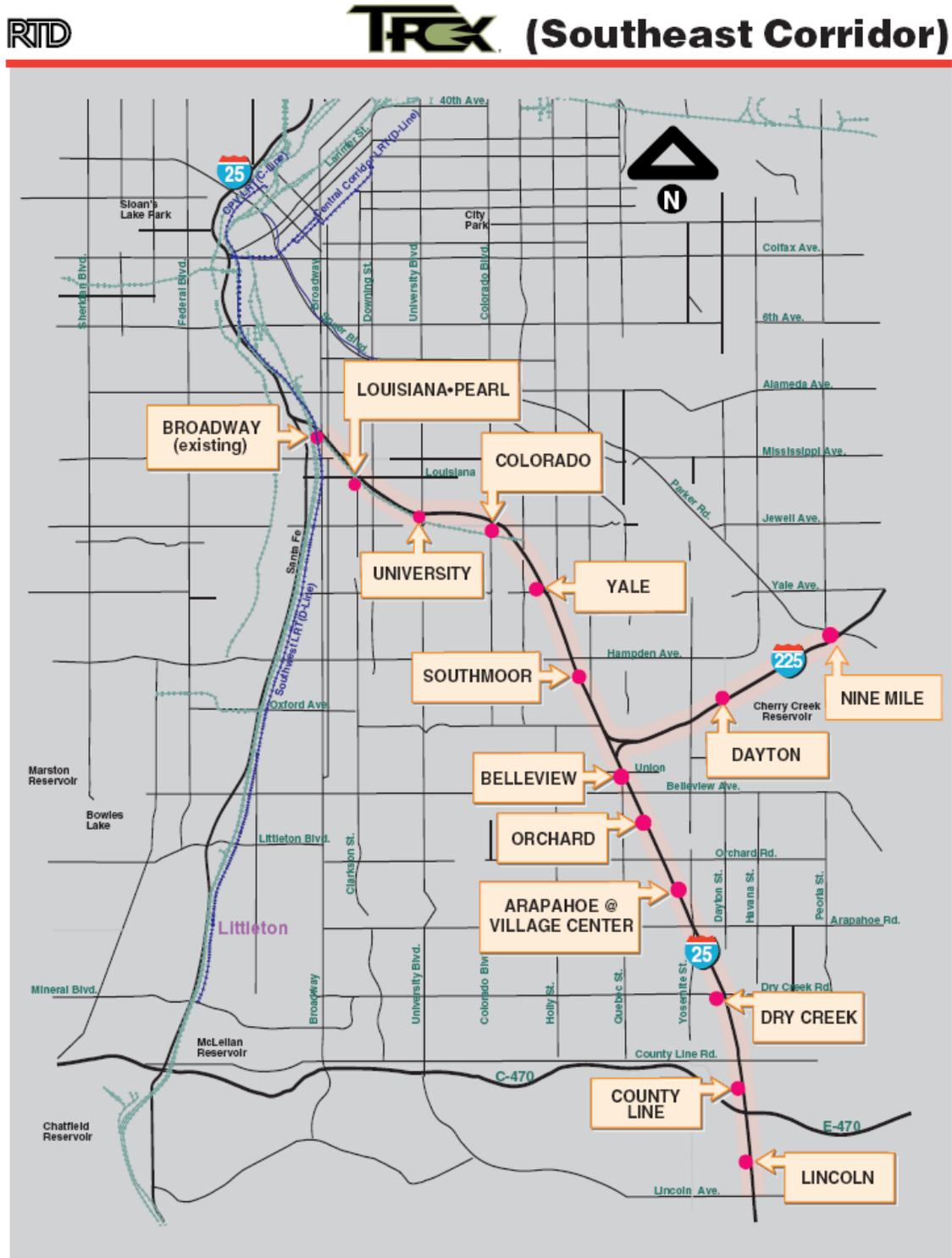
Learning from the successes and challenges related to TOD along the Southeast Corridor will be invaluable for FasTracks corridors to ensure that TOD opportunities are truly realized. This report documents the thoughts and recommendations for improvement on the TOD process for the T-REX project from key stakeholders who were involved in the project from the early planning through construction. This report is intended to provide guidance on what was learned about the TOD process on the T-REX project so that the Denver Metro area can truly take advantage of the current enthusiasm and excitement regarding TOD.

Project Description and History

The T-REX project was a multimodal project which included the addition of light rail along the I-25 corridor as well as widening of the interstate highway. Specific details of the light rail and highway widening elements included:

- 19.7 miles of new, double-track light rail: 15.2 miles from the current Broadway station to a new station at Lincoln Avenue in Douglas County, and 4.5 miles along I-225 to Parker Road
- Thirteen new light rail stations

- Widening of I-25 from 3 to 4 lanes in each direction between Logan Avenue and I-225 and from 3 to 5 lanes in each direction between I-225 and C-470.
- Reconstruction of a number of interchanges and bridges along the corridor.



The history of rapid transit in the Southeast Corridor spans several decades beginning in the early 1980s when the concept was first explored. A timeline of milestones related to the T-REX project is identified below beginning with the completion of the Southeast Corridor Major Investment Study in 1997.

- *1997* – Major Investment Study completed resulting in the adoption of light rail in the Denver Regional Council of Government’s fiscally constrained regional transportation plan (RTP).
- *November 1999* – Voters approved two separate ballot initiatives that allowed for the issuance of bonds to fund T-REX. With the entire project funding in place T-REX was able to move forward as a design-build project allowing for the completion of the project as a whole rather than in segments.
- *December 1999* – Final environmental impact statement (EIS) completed
- *March 2000* – Record of Decision signed by Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) making T-REX eligible for federal funding.
- *November 2000* – Full Funding Grant Agreement approved by FTA providing T-REX \$525 million in New Start funds for the construction of light rail.
- *Fall 1999 - May 2001* – Design-build contractor procurement process which started with the development of a Request for Proposals (RFP) and ended with the selection of Southeast Corridor Constructors (SECC), a joint venture between Kiewit Construction and Parsons Transportation Group, to design and build the \$1.67 billion project (of which \$879 million was for light rail).
- *June 2001- December 2003* – Final design phase
- *June 2001 – September 2006* – Construction of T-REX.
- *September 2006* – Completion of all highway related construction for the corridor.
- *November 2006* – Opening of the light rail portion of the corridor.

TOD Lessons Learned Workshop

The T-REX project’s major stakeholders conducted a forum in May 2006 to determine what could be learned about implementing TOD in the Denver region from their experience—especially how it could provide lessons for the future FasTracks corridors—keeping in mind the caveats that made T-REX a unique project: the post-dot.com and post-9/11 real estate market, the development context of an interstate highway corridor, and the proximity of the Tech Center employment base.

Perspectives were solicited from a wide array of project stakeholders—the project owner, local government jurisdictions, contractors, consultants, and developers—on the positives and opportunities for improvement during each phase of the project, as well as regarding the sharing of information and the different roles of their respective parties. A list of project stakeholders involved in the workshop forum and follow-up interview process is included in the Appendix of this report. Responses were compiled by project phase: the planning and Environmental Impact Statement; development of a request for proposals and contractor solicitation and procurement; project design, which occurred somewhat concurrent with construction under the design-build process; and actual construction.

WORKSHOP SUMMARY

The responses below came from participants at the May 18, 2006 T-REX TOD Lessons Learned Workshop. Appendix A provides a list of workshop participants. Project consultants, owners, contractors, local jurisdictions, and the development community were asked to cite the positives and opportunities for improvement during each phase of the project, as well as regarding the sharing of information and the different role of their respective parties. The information from the workshop was supplemented by individual interviews with stakeholders who were unable to participate.

Overall Factors Influencing TOD

Despite all the development now occurring in the Southeast Corridor, there are some general overall factors that had a negative influence on the success of TOD that were outside of the control of the stakeholders involved in the process. The first factor was that although the EIS process was initiated in 1998 (and the MIS started as long ago as 1995), funding for T-REX was not secured until the passage of the two bond initiatives in November 1999, just four months before the FTA's Record of Decision accepting the final EIS. Until it had a local funding source, T-REX was just another in a long list of transportation plans with an uncertain likelihood for implementation. Local government jurisdictions face many planning priorities (particularly in this part of the Denver region, which included some of its fastest-growing communities at the time) but have only limited financial and human resources. In addition, some developers and property owners were uncertain of the reality of the project which negatively influenced the prioritization of resources for the planning and design of TOD.

The second factor was the commercial real estate market. The dot-com bust began eroding the regional office market in 1999, which had a big impact on the Denver Tech Center, and was exacerbated just two years later by the terrorist attacks of 9/11. Just as the local jurisdictions began to turn their attention to T-REX, the development community entered a period of retrenchment due to the large number of job losses in metro Denver, which translated into high vacancy rates along the I-25 corridor office market.

By the time the market began to rebound, other factors dulled RTD's and SECC's collective appetite for changes to the project to accommodate real estate development: T-REX was fiscally constrained by the FTA-approved budget, the design-build process discouraged changes to plans late in the game, and the focus and expertise of the project owners and contractors was on transportation infrastructure, not vertical development.

Finally, at the time T-REX was initiated in the late 1990s there was a general lack of understanding about TOD in the metro Denver market. There was a lack of TOD examples regionally and nationally which contributed to the ability of market to respond to the opportunity. There was little understanding of what the TOD opportunities were. Since 1999, TOD has become much more mainstream in the real estate community and has been cited by organizations like the Urban Land Institute as one of the hottest real estate trends in the future.

EIS and Planning Phase

A significant effort was made by the project team (RTD, CDOT, and the EIS consultant team), to reach out to specific stakeholders and developers during the project planning phase. For example, there were many discussions between the project team and property owners around some of the stations with an interest in development. Small changes were made to the EIS after receiving developer input.

Some local jurisdictions, particularly the City and County of Denver, were proactive about planning for TOD. A basic level of station area planning was completed in conjunction with the EIS for stations within Denver. However, only one plan was formally adopted by Denver and that did not occur until well after the completion of the EIS.

Participants in the workshop, however, listed many opportunities for improvement in this phase of the project. A major point was the need to maximize environmental clearance in the EIS phase to preserve future flexibility. Participants felt that locations for stations, bus and parking facilities were essentially a “done deal” too early in the process. RTD and CDOT felt pressure to “lock down” the design prior to the release of the RFP for the design-build contractor to prevent the contractor from value engineering urban design features and other station elements. Design by the project team was taken to the 90 percent level for station elements including parking, bus bays, platforms, and shelters where as most of the other project elements that were provided to the contractor were only designed to a 30 percent level. This resulted in limited flexibility in being able to make design changes to support TOD options without requiring change orders or even re-opening the environmental process. Some participants would have also liked to have seen more emphasis on TOD in the scope of the EIS and more TOD area expertise on the EIS team.

Despite the outreach made during the EIS, participants cited the need for more participation by the development community and adjacent property owners. While RTD and CDOT could not force any of these stakeholders to the table, the local jurisdictions could have used their voice, or even their regulatory leverage, to encourage more early collaboration. Furthermore, if the local jurisdictions had created and adopted land-use plans for the station areas, those would have been acknowledged and referenced in the EIS, and informed the project design. In the absence of adopted plans or even the initiation of a public planning process by the local jurisdiction, the project team in some instances made the error of developing TOD concepts without coordinating with all the local landowners.

Contractor Solicitation and RFP Phase

Understanding of TOD was part of the RFP evaluation criteria. However RTD did not have any full-time TOD staff so there was limited specific language included in the RFP related to how TOD should be addressed. In addition, there was limited TOD experience regionally in Denver to really draw on for specific direction for how to address TOD in the RFP.

A major opportunity for improvement identified for this phase was establishing a process for dealing with TOD that is clearly outlined in the RFP with complete buy-in from the transit agency and local jurisdictions. This process should have been crafted with input from developers. Another key opportunity for improvement is to strategically pull out certain park-n-

Rides where there is significant TOD opportunity from the project contractor's scope of work, to retain as much flexibility as possible for how the site could develop. As one respondent pointed out, "Design-build can work, but the degree of complexity with specific sites may warrant extracting them from the design-build contract and handled separately."

The feasibility of this option would be impacted by whether federal funds are involved in site acquisition, how the site was portrayed in the EIS, and the timing of any joint development so that the parking piece at least would be operational for the opening of revenue service. As part of the aforementioned procedure, there would need to be an established protocol and budget for paying for such changes. However, it should be understood that construction costs may be higher in this situation because individual stations would have to bid out separately from the design-build contract. Also, a "drop dead" date for TOD-related changes needs to be established early to ensure that essential station elements are completed by the start of revenue service.

Final Design Phase

The project team clearly communicated the expectations for responsibility for design changes, which rested with the local jurisdiction and/or the developer. For example, Greenwood Village paid over \$7 million to relocate the park-n-Ride for Arapahoe Station since it was a change to design. There would have been less cost impact from design changes if some park-n-Rides had been pulled out of the design-build project.

Keeping the cost implications in mind, participants also said the project team and SECC demonstrated flexibility in making changes to improve TOD potential at various sites. Also, local jurisdictions became much more engaged during this phase of the project; once plans are drawn up, it is easier to get stakeholders engaged and responsive. The plan for Village Center at Arapahoe Station was a good example of this newfound motivation.

Participants felt a critical improvement at this phase would be presenting a preliminary design for each station to the community, with extensive community involvement where TOD was being incorporated or considered. The contractor could consider a hold period to allow relevant parties to review, but could proceed with design of the platforms, alignment, etc. Another suggestion was to have the parking facilities constructed as late as possible in the project to allow for maximum flexibility on relationship and access to adjacent development, but this needs to be balanced against all other goals such as contractor cost and efficiency.

Participants also felt that decision-making power was unclear at this phase. Agreements between the developer and contractor were not always acceptable to RTD or local jurisdictions. To improve upon this, it will be important to minimize pitting stakeholders against each other. Some ways to address this need are to provide clear and frequent communication amongst stakeholders, establish and communicate the decision making authority and roles in the TOD process, and involve the public when appropriate. Participants also suggested this phase of the project suffered from the absence of a full-time TOD expert on RTD's project staff.

Construction Phase

There was generally good dialogue between the project team, SECC and landowners, and other stakeholders reported good coordination between the project team and SECC during the

construction phase. The aggressive schedule also facilitated the timely resolution of challenges and prevented unresolved problems from dragging on.

But participants identified a need for more openness in the change order process. They suggested that details of change orders should be worked out in a setting where assumptions were understood by all involved. This would allow a common understanding of how costs were developed and make it easier to reconcile discrepancies in change order costs.

Participants also suggested that local jurisdictions and RTD need to consider how land-use review procedures will impact the project, perhaps using a special streamlined process for affected property owners as necessary. T-REX staff felt they were susceptible to being caught in the middle of negotiations between the developer and local jurisdictions. They recommended using checklists for property owners for regulations, easements, etc.

Information Sharing

The co-location of the project owners and the design-build contractor was considered a major plus for purposes of sharing information. Participants said the meeting summaries for the technical meetings were of excellent quality and very useful. They also complimented the amount and quality of public presentations.

Participants cited good coordination between land-use planning at station areas by the City and County of Denver and preparation of the EIS. They also praised the project team for its willingness to be open to discussions and partnering on TOD.

The key opportunity identified for improving information sharing relates to planning. Participants said RTD should interface more with the jurisdiction staff to better integrate TOD into local planning efforts. While the local jurisdictions must take responsibility for the planning and land-use powers, RTD must be willing to partner and advise local jurisdictions about the interface with the project process.

Stations located at jurisdictional borders, such as Dayton, were identified as a special problem. These situations require an increased level of coordination and communication. Participants recommended that inter-governmental agreements be signed between the agencies with respect to TOD planning at these station areas. Participants also said it was important to ensure RTD has adequate staffing for working with jurisdictions on station-area planning and design and supporting legal documents.

Entity Roles

Participants said that the T-REX experience provided an excellent foundation for the FasTracks program, especially regarding the relationship between RTD and the contractor. They emphasized that it was critical for all stakeholders to develop a team mentality to address challenges and opportunities.

The need for designated TOD representatives for each entity with authority/budget was identified as an important improvement that should be made to the process. There should also be some

type of TOD workshop/training early in the process for the developers, jurisdictions, owner, designer, and contractor.

It was suggested that RTD could facilitate the TOD planning process by bringing players together and that RTD hire strategic development expertise familiar with development process and financing to supplement its own staff. Participants reiterated their desire that the RFP be specific in defining roles for the contractor and project owner in TOD implementation. This should spell out early on what everyone's expectations and roles are in the TOD process.

The local jurisdictions should have zoning/planning tools in place, take a stronger planning role, and be more supportive of a higher intensity of development at station areas. Jurisdictional staff should take the time to educate local elected officials and need to be able to sell reduction of parking requirements in adjacent neighborhoods. RTD should also look for opportunities to coordinate with local jurisdictions during ROW acquisition to identify properties with the potential for joint development consistent with federal regulations for property acquisition. Participants also suggested the importance of creating local jurisdiction incentives for TOD, such as density bonuses, parking reductions, and subsidized land.

CONCLUSIONS

The T-REX project by many standards has been a tremendously successful project. The fact that the project was able to be completed ahead of schedule and within budget with relatively minimal disruption to the neighborhoods within the corridor is truly an amazing story. From the TOD standpoint, T-REX has had some success, but there are also some important lessons to be learned that can be applied to other future FasTracks corridors to build and improve upon the TOD process.

The following is a list of important lessons learned from the T-REX TOD process:

- ***Early action on TOD during the EIS*** – starting a discussion about TOD during the EIS process is critical to ensure that TOD can be well integrated with the transit project development process. Local jurisdictions should initiate station area planning during the EIS and adopt those plans prior to the completion of the EIS process. As part of this process, transit supportive zoning should be developed by local jurisdictions if does not exist and pursued as part of implementing the results of adopted station area plans. RTD, developers/property owners and the neighborhood residents are key participants in the station area planning process. This process provides the best opportunity for TOD plans to be integrated into project design if they are evaluated/discussed early before the preliminary design for the transit project is completed. At a minimum, it provides essential input into the formal EIS process. Although it should be noted that it isn't the only factor evaluated in making decisions about station location and design. Special efforts should be made by local jurisdictions to reach out to property owners and developers along the transit corridor to engage them in the station area planning discussion.

- ***Establish expectations about the TOD process early, with buy-in from critical stakeholders*** – roles in the TOD process must be defined early during the station area planning and EIS processes to establish responsibilities for moving forward with TOD plans. Clear definition of the responsibilities of the local jurisdiction, developer, RTD should be spelled out to minimize potential future conflict. As the project moves forward into final design and construction, a clear process should be laid out for how design changes associated with TOD will be addressed. This process should be documented in the RFP for design consultants and/or contractors so that they can incorporate the process into their formalized bid proposal. The process for addressing changes resulting from TOD during design and construction should be developed with input from developers, contractors, and designers to ensure consent on the process. For local jurisdictions, it is important to establish a streamlined TOD review process to help expedite the process. At a minimum, checklists should be developed by local jurisdictions which set expectations as to what issues must be addressed when during the development approval process. Another option taking things a step further would be to establish a TOD design budget for the design-build contractor to deal with design changes associated with TOD.
- ***Promote flexibility for TOD by maximizing environmental clearance and delaying final design for stations with TOD potential*** – stations with clear potential for TOD should have footprints cleared in the EIS that accommodate flexibility in design and/or allow for design options that give flexibility to consider alternative station designs. Both of these options give more flexibility to stations with TOD potential to make changes following the completion of the EIS and therefore have a reduced risk needing to re-open the EIS process. In addition to promoting flexibility, stations with clear potential for TOD should only be designed to a minimum level while other project elements are accelerated during final design. More specifically, parking facilities, bus facilities, and drop off locations should be designed to a preliminary level while other facilities such as rail track, structures and platforms are accelerated during the design process. This may be accomplished by working with the designer and/or contractor early to put a hold on preliminary design for certain stations. If possible, this should be identified prior to the selection of a final design consultant and/or design-build contractor and addressed specifically in the RFP for the consultant/contractor. As a part of the design process a clear schedule should be established that defines “drop dead” dates for changes associated with TOD so that impacts to the overall project schedule are minimized. Another option to consider is for RTD to solicit development interest through a joint development RFP for stations with a high potential for TOD separate from the design-build contract. In this situation, RTD would make the land purchased for transit purposes available for private development with the caveat that the private developer would be required to accommodate RTD’s parking and bus facility needs. A key to this approach would be to clearly establish progress milestones with a drop dead construction start date to prevent the potential for RTD facilities to not be ready in time for the opening of revenue operations for the transit line.
- ***Set up mechanisms to promote close coordination amongst stakeholders*** – coordination and communication amongst stakeholders in the TOD process is critical. There are

several mechanisms to promote this including having RTD staff co-locate with designers and contractors. This promotes a team mentality and facilitates close communication between RTD and the designer and contractor. Adequate staffing specifically for TOD should be provided by the transit agency in the design and construction phases of the project. The transit agency should provide full-time staff at these critical project phases to ensure efficient and comprehensive coordination with local jurisdictions, developers, designers, contractors and other stakeholders (this could be done through the use of consultants or dedicated RTD staff). In situations where stations border multiple jurisdictions, intergovernmental agreements (IGAs) or other legal mechanisms should be developed between jurisdictions early during the EIS phase to establish a communication process for the transit station design and TOD process. These types of stations require increased levels of coordination and communication and IGAs can establish clear expectations for a decision making process to minimize conflicts during the design and construction process. Finally, RTD should facilitate corridor-level communications on TOD to promote information sharing amongst local jurisdictions. This will allow jurisdictions to share information and coordinate on specific, related issues and will allow jurisdictions to learn from each others successes and failures. Also, during this process a clear hierarchy of responsibility and financial implications associated with the timing of TOD-related changes can be established (i.e., as projects progress into final design and construction the financial implications and responsibilities of TOD-related changes need to be clearly understood).

Appendix A
TOD T-REX Lessons Learned Workshop Participants

May 18, 2006 Workshop Participants

Mark Brown, Arapahoe County and City of Centennial
Bill Skinner, Arapahoe County
Loretta Daniel, City of Aurora
Catherine Cox-Blair, City and County of Denver
Marilee Utter, Citiventure Associates
Steve Hebert, City of Greenwood Village
Dena Belzer, Center for Transit Oriented Development
Shelley Poticha, Center of Transit Oriented Development
Steve Koster, Douglas County
Bill Spragins, FMI
Brooke Maloy, Front Range Land
Dave Beckhouse, FTA
Jerry Jaramillo, Kiewit Construction
Bob Mattucci, Kiewit Construction
Joe Wingerter, Kiewit Construction/SECC
Eric Anderson, Parsons Brinckerhoff
Susan Altes, T-REX/RTD
Andy Mutz, T-REX/RTD
Rick Clark, T-REX
Steve Wilensky, T-REX/Carter & Burgess
Bill Sirois, RTD

Additional Participants Interviewed

Frank Cannon, Continuum Partners
Scott McFadden, Trammell Crow Residential
Buz Koelbel, Koelbel and Company
Jeff Sheets, Koelbel and Company
George Thorn, Mile High Development