

Development of Right-of-Way Design and Strategy Incorporating Public Input for the Banfield East Burnside Corridor

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The Banfield light rail project extends 15.1 mi between downtown Portland, Oregon (population 370,000), on the west and the central core of the city of Gresham (population 35,000) on the east, includes 25 stations, and is currently under construction. With a budget of \$307 million, the project consists of two portions--the widening of the Banfield Freeway (I-84) to accommodate an additional lane in each direction and the construction of a light rail transit system. In providing the region with light rail mass transit, the Tri-County Metropolitan Transportation District of Oregon (Tri-Met) decided jointly with Multnomah County to locate the central portion of the corridor along East Burnside Street. Known to the project staff and consultants as Line Section 2, East Burnside is primarily a residential corridor (Figure 1) interspersed with portions of strip commercial development.

When the construction of Line Section 2 was about to begin, acquisition of right-of-way along East Burnside had not yet begun. Five hundred forty properties were about to be affected--90 percent of them front yards of residential homesites--without a clear notion of exactly what impact the project would have on the lives of the inhabitants and on their respective sites. Tri-Met's dilemma was apparent. The project was designed and was about to be

built. Multnomah County was vitally concerned about the welfare of its property owners, residents, and taxpayers along East Burnside and expressed this to Tri-Met in no uncertain terms. Within Tri-Met, the Public Affairs and Planning Departments (engineering included) were at loggerheads about how to proceed. There was fear that the entire project might stop right there. Fred Glick Associates, Inc. (FGA), was called on in February 1983 to assist in resolving a potentially volatile situation between the two agencies, and between Tri-Met's Engineering and Public Affairs Departments.

PURPOSE OF FGA INVOLVEMENT

There were several reasons for FGA's involvement in the Banfield project: first, to assure the integration of light rail transit into the community of East Multnomah County; next, to assure smooth implementation of construction--any measure proposed as a catalyst to expedite fitting the project into the community could not delay construction; third, to develop a design method for reducing the need for property acquisition wherever possible; and finally, to address the site-specific needs of each of the 540 residential and commercial properties.

To justify its role in the design process, the agency started with the assumption that when construction affects more than 500 front yards, severe problems can easily arise. Tri-Met therefore decided to respond to the public. Had Tri-Met ignored the public interest, by the time the project had been built they could have won the battle and lost the war thus severely affecting their long-term goals for light rail transit. This is a condition that Tri-Met, a progressive and yet controversial agency, could barely afford to risk. The agency believed that, "since during construction there is not much good to tell, the best you can hope for is to eliminate any negative publicity." Most decisions about large engineering projects are made on a cost basis. This time, however, the agency decided not to use a benefit-cost analysis to make an extremely important decision. To avoid a potentially significant public relations cost and a delay in schedule, a value judgment was made by the agency to include the East Burnside populace in the right-of-way design of Line Section 2.



FIGURE 1 East Burnside Street before construction.

PROJECT APPROACH

The primary objective for FGA in the East Burnside project was to develop a way for light rail transit (LRT) to "fit" into the community--namely, all the properties fronting Line Section 2. An extremely fortunate aspect of the firm's role in the project was that as a subconsultant to Bechtel Construction, Inc., the prime civil engineering consultant, FGA had easy access to all the other players involved in the design of the project. Because the project was designed by engineers and architects, it appeared appropriate that a landscape architectural firm became responsible for determining how to fit LRT into an established, rural residential corridor. Working primarily with the design team, the agency's community relations and engineering staffs, and the residents of Burnside, FGA played a design mediation role throughout the course of their involvement. In addition, FGA worked closely with Multnomah County and three utility companies to further integrate all site development requirements into the new layout for each property--the total result being a new corridor design.

Another benefit of FGA's involvement in the project was previous experience in the Transit Station Area Planning Program (TSAPP) portion of the Banfield project, in 1981 and 1982. TSAPP was an effort by Tri-Met, in collaboration with Portland's other regional government, the Metropolitan Service District, to help the three affected jurisdictions, Portland, Multnomah County, and Gresham, to develop a new land use, zoning, and urban design component, recognizing the major catalytic effect LRT would have on growth. Developed as part of that study, to bridge the extensive urban design recommendations and a new zoning ordinance prepared for the county, was a series of performance standards that consisted of physical factors and quality of life factors. Although the physical factors of building location and parking location could not be reasonably addressed as part of LRT construction, vehicular and pedestrian access to properties and the corridor edge certainly could. Part of the quality of life factors, the need for significant vegetation preservation, was based on the valued stands of Douglas fir present; the desire for visual privacy certainly had become an important concern to most of the residents of the area.

Skillfully balancing all of these factors enabled FGA to help fuse the design process both on an intraagency level between engineering and community relations within Tri-Met and on an interagency level between Multnomah County and Tri-Met. Components of the design process included infrastructure reconstruction for all landscape and site features, as well as the siting of all utility poles along the right-of-way. While sidewalks that had been designed by FGA were constructed on both sides of Burnside, sanitary sewers were installed for the first time. This allowed residents to abandon the septic tanks they had previously used.

SCOPE OF WORK

Inventory of Site and Landscape Features

At the beginning of the work in the spring of 1983, the first task undertaken was to produce an inventory of all existing site and landscape features, located within and adjacent to the right-of-way, that might be affected by construction. A task, which could conceivably have taken many months using traditionally precise engineering survey methods, was completed within 3 weeks using a 100-ft rag tape

and a baseline offset 25 ft from the road's centerline. Fifty-six sheets at 20-ft scale were then drafted in 3 weeks; this completed the survey to an accuracy of within 1 or 2 feet--all that was really necessary for about 95 percent of the affected site features.

Before the completion of the survey there had been no known record of any features along the right-of-way, except for inconsistent pieces of information about utility poles held by the utility companies and aerial photographs of mediocre resolution that were flown by the state and provided for the project. Surely, neither of these informational resources was an acceptable source of information about features such as shrubs, fences, irrigation spray heads, driveways, mailboxes, and specific locations of trees. With the necessary base information known and recorded, it was possible to determine how to proceed with redesigning the right-of-way.

Development of a Corridor Design Strategy

To begin the design process, FGA developed a design strategy intended to respond to some of the basic concerns likely to be of significance to the property owners and residents of East Burnside. Before the firm's involvement in the project, the transitway was planned for the center of the corridor, and automobile traffic was still designed primarily as single eastbound and westbound lanes (except in the Rockwood commercial area where there are two lanes each way) located north and south of the trackway. With LRT planned for the corridor, the Burnside community was about to become potentially less dependent on the automobile and more dependent on light-rail. In an effort to support the use of light rail transit by residents of the neighborhoods surrounding the eight East Burnside stations, Multnomah County required Tri-Met to construct sidewalks on both sides of the street, along the entire 5 mi. Before the construction of LRT in East Multnomah County, Burnside Street was a narrow, two-lane rural roadway, with a wide right-of-way varying between 100 and 110 ft in width. Even with this positive condition, implementation of the two-way curb-separated trackway in the center of the corridor, flanked by a vehicular and emergency lane in each direction, with curb (planter strip) and sidewalk beyond, consumed nearly all the available right-of-way throughout most of East Burnside. This meant that the right-of-way itself also required expansion.

The resultant problem was multifaceted:

- * For years the residents had used the rural right-of-way as extensions of their own sites, planting and in some cases constructing amenities and other improvements for their own use.

- * Proper placement of the new sidewalk, to be located on the fringe of the right-of-way, required demolition or removal of many of these features.

- * The new sidewalk in many cases was to be significantly higher or lower than the existing right-of-way grades.

- * Multnomah County Required the implementation of a rigidly imposed right-of-way detail--a 5-ft sidewalk set back 3 ft from the curb.

- * There were related concerns of encroachment on privacy, removal of significant vegetation, and acquisition of right-of-way from individual property owners.

- * In some cases, where right-of-way needed to be purchased, the cut or fill slope at the back-of-walk would encroach further onto private properties, affecting sites more severely than previously determined.

* Three utility companies were involved in helping determine the best positions for relocation of all utility poles in Line Section 2 where it was decided that, for cost purposes, all utility lines should remain above grade.

* Right-of-way had not yet been purchased, and yet Tri-Met's Engineering Department required that the project remain on schedule.

* The lives of thousands of residents were about to be severely affected by major public works construction in their own front yards with potentially no personal contact with the responsible agency (other than several large informational meetings and dissemination of mailers).

* Tri-Met's Public Affairs Department clearly recognized the impending volatility of the situation and firmly believed that sensitively treating the property owners and residents was an absolute must.

At this juncture, a design strategy was developed for responding to all these critical issues. The firm realized that Multnomah County's rigid right-of-way detail should not be implemented across the board because in numerous instances it just did not work. With some flexibility in locating the sidewalk and the acceptability of eliminating the planter strip, in many cases the encroachment on privacy could be softened, important trees and site amenities could be preserved, and the acquisition of right-of-way could be prevented. If this design philosophy were coupled with personal contacts by the community relations staff and the landscape architectural consultants, presenting a preliminary design concept for each individual site's reconstruction, feedback could be generated and result in a final design plan reflective of each property owner's individual functional and aesthetic requirements.

At the first major joint meeting of Tri-Met and Multnomah County to review the strategy prepared by FGA, the entire process was viewed as viable by both agencies and approved.

PRELIMINARY RIGHT-OF-WAY DESIGN

The preliminary design of the right-of-way was prepared entirely by FGA with basic engineering data supplied by the Bechtel team. The three primary design parameters remained as originally intended:

1. Reduce the acquisition of right-of-way,
2. Reduce the impact on visual privacy, and
3. Preserve existing significant vegetation wherever possible.

These plans were reviewed for feasibility with the civil engineers and then presented to the public to begin the feedback process.

Specific design features incorporated into these preliminary plans included locations of:

- * Fire hydrants,
- * Traffic signs,
- * Utility poles,
- * Street lights,
- * Residential lights,
- * Mail boxes,
- * Water meters,
- * Tree wells or retaining walls,
- * Fences,
- * Items to be removed or relocated,
- * Property lines,
- * Top or toe of slope (at back of walk),
- * Centerline of roadway,
- * Existing tree or shrub to remain,
- * Existing tree or shrub to be removed,

- * Existing tree or shrub to be relocated,
- * New location for existing tree or shrub,
- * New tree or shrub,
- * Existing hedge to be removed,
- * Existing hedge to remain,
- * Street tree frameout,
- * Vegetation massing,
- * Signal poles, and
- * Fill or cut slope line.

Every conceivable above-grade site feature located either in the right-of-way or on private property within the proposed construction area was considered in developing the new preliminary corridor site plan. Each element was to be either left in its existing location, relocated, replaced (in kind) (Figure 2), or removed (with compensation offered by the Oregon Department of Transportation). The intent was to get the message out to the community that "Tri-Met cares." With this first "best guess" about the projected site reconstruction for each property, design feedback could be gained and recycled back into the site plans to achieve an acceptable final layout. Property owners, agencies, utilities, and the design consultants needed to approve a plan for it to be considered acceptable.



FIGURE 2 Existing hedge being replaced.

The final right-of-way plans contained the same basic design features as the preliminaries, but they also incorporated a great deal of analysis and coordination among the responsible parties involved in final plan approval and acceptance.

NEIGHBORHOOD COORDINATION MEETINGS

Beginning in late spring 1983 and running through spring 1984, Tri-Met held biweekly neighborhood meetings specifically geared toward the affected East Burnside residents whose portion of the corridor design had just been completed (Figure 3). The original community relations team was increased in size, with several highly visible community activists--women who were totally dedicated to the welfare of the residents and businesses situated along the light rail corridor. In addition, FGA supplied to the team two designers capable of adding site-design expertise to the community contacts in order to expedite communication of information between designer and property owner. The community relations staff, in close concert with FGA, worked to establish rapport with every affected property owner,



FIGURE 3 Property owners viewing preliminary design plans.

resident, and business person located along Line Section 2.

At these group meetings, that an average of about 20 property owners were invited to attend, presentations were made by the head of the community relations team, by the staff civil engineer in charge of the project, and by FGA. FGA explained the process that had been developed, what it was intended to accomplish, and that the goal was to obtain site-specific information from each individual to help in understanding their personal needs. When the presentation was completed, the meeting broke up to allow for informal discussion and for individual meetings to be scheduled between each property owner and a community representative or a designer, or both, some time during the next week.

FINAL CORRIDOR RIGHT-OF-WAY DESIGN INCORPORATING COMMUNITY INPUT

The preliminary and final right-of-way designs were distinguished quite simply. The preliminary was a design tool intended for use as a catalyst with which to generate feedback from the community. The final was a plan created by incorporating the feedback from the community contacts into the preliminaries, resulting in a plan responsive to each property owner's concerns: whether the sidewalk was set back 3 ft from the back-of-curb or located at the curb; whether a slope or a retaining wall was preferred at the back-of-walk; whether each plant and site feature needed relocation, removal, or demolition; whether the property required a wider driveway or not; whether the homeowner was elderly or infirm and required extra-special attention; whether the project's impact on specific properties was so critical that their livability was impaired beyond a reasonable doubt. There were other basic questions too numerous to mention here, all of which required a response.

AGENCY, UTILITY, AND CONSULTANT COORDINATION

To round out the design process, FGA needed to confirm the viability of each site-specific scheme with Tri-Met's staff engineers, four utility companies (Portland General Electric, Pacific Power and Light, General Telephone, and Northwest Natural Gas), and the Bechtel consulting team (the civil engineering subconsultant, the traffic engineer, and the architects involved in station design). If any one of these sources raised a critical concern about the

design of a certain site, the plan had to be routed back to the property owner and renegotiated to a point of greater feasibility; then it had to be rechecked with the responsible parties to verify compliance with codes (or just good design) from their particular professional point of view. It made much more sense to deal with the question of an acceptable utility pole location (Figure 4) before its installation instead of after--especially from Pacific General Electric's perspective.



FIGURE 4 Utility poles being replaced.

PRECONSTRUCTION SITE AND LANDSCAPE PLAN

From the final corridor right-of-way design sheets, each agency, utility, and consultant was able to derive its specifically required design information and proceed with its particular design process. Before the general contractor's first work task--demolition--a highly qualified landscape contractor was selected, through a request for proposal process instead of the standard bidding process, to begin dealing sensitively with the landscape and site-feature relocations and removals. Again, every property owner or resident was contacted by the landscape contractor a day or two before he even began his work to be certain that he had approval to begin construction. The landscape contractor's job was to stay well enough ahead of the road contractor's demolition crews (Figure 5) to avoid any conflicts



FIGURE 5 LRT construction begins after RFP landscape completed.

of private property interests and guarantee successful implementation of the first phase of this complex, detailed, and sensitive process. An excellent result was achieved.

FINAL LANDSCAPE AND SITE PLANS FOR PRIVATE PROPERTIES, RIGHT-OF-WAY, AND TRANSITWAY

As the final step in constructing the Line Section 2 right-of-way, FGA prepared the final landscape plans for the entire 102-block, 5-mi corridor. "Landscape" is used to describe all aspects of site development aside from structural detailing. Included are sidewalks, private lighting, fencing, low walls, crib-wall plantings, landscape finish work on private properties, slopes, right-of-way, and all plantings within the trackway.

A key to landscape plantings within the trackway, as developed by FGA, was the functional use of all plants for safety purposes wherever possible. This safety consciousness was intended to provide the agency with double the plant's value--each would, through its presence, add to the aesthetics of the corridor and, simultaneously, in many instances when articulated properly, provide higher visibility for elements like unmarked pedestrian crossings and the interface between vehicular and LRT crossings.

CONCLUSION

The result of this involvement in the effort to fit the light rail project into the East Burnside community has been the streamlining of the entire process. Although there were serious doubts about the chances for the successful implementation of the process outlined earlier, the Director of Public Affairs viewed the program's efforts, when completed, as a "phenomenal success." Every one of the primary

players involved in this design challenge benefited in the end:

- * The East Burnside populace had become part of the project.

- * Tri-Met's Community Relations Department had a tremendously positive impact on the lives of the residents, compared to what could have occurred. Also, an assessment made by nonengineering people has become an accepted part of the LRT construction process.

- * The engineering staff was able to draw on a wealth of important design data while keeping the project on schedule.

- * Multnomah County was satisfied that its constituents were treated fairly, given the existence of major public works construction in their front yards.

- * The utility companies were able to see the entire "picture" along the corridor comprehensively--the reasons for utility pole locations were apparent.

- * The Bechtel team and the general contractor used the design drawings to structure the entire corridor edge treatment--building driveways right from the design plans.

The role of FGA that started out with a single, three-part purpose (saving right-of-way, preserving trees, increasing privacy) resulted in a multifaceted plan that was useful for the whole project. Essentially, costs were not increased for this implementation effort (especially considering its scale) and a long-term positive impact, it is believed, will result from this experience.

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