The appropriate O&M cost variables were then applied to the mile, hour, and peak vehicle estimates to calculate an estimate of annual operating costs. The cost factors for bus and light rail are based on total vehicle hours and total vehicle miles (rather than revenue vehicle miles and hours), since the ridership model produces total mile and hour estimates for these modes. The bus and light rail estimates also include an estimate of fixed and administrative costs based on the number of forecasted peak vehicles. Using a three variable model for these two modes (the bulk of DART's service and the only modes that vary across the alternatives) allows the O&M cost model to capture shifts in operating speed and peak to base ratio across time and across alternatives. In fact, the forecasts indicated that the average speed of DART's bus service will decrease in the future, while the average speed of the light rail service increases.

The cost factors for commuter rail and paratransit are based only on revenue vehicle hours, since the ridership model produces only this forecast variable for these two modes. Since the amount of service for these modes does not vary between alternatives (and does not vary much from actual service today), the simpler variable model will still capture costs at a sufficient level of detail.

Table 2-5 presents the O&M cost variables for each mode that are used to estimate the systemwide O&M costs.

TABLE 2-5
OPERATING AND MAINTENANCE COST VARIABLES

Variable/Mode	Bus	LRT	CRT	Paratransit
Cost/Vehicle Hour	$25.11	$27.36		
Cost/Vehicle Miles	$1.72	$2.91		
Cost/Revenue Hour			$1,16173	$70.51
Cost/Vehicle	$116,762	$558,558	8,785,636	12,269,284

Source: Nancy R. Edmonson, based on DART data, 2006

The cost estimates for the commuter rail and paratransit modes are based on the forecasted revenue hours for each alternative and the budgeted cost/revenue hour for FY 2006.

Table 2-6 presents annual O&M cost estimates by alterative and mode.

TABLE 2-6
OPERATING AND MAINTENANCE COSTS CONSTANT $2006

	Alternative	
	No Build	**Build**
Mode		
Bus	$218,551,304	$231,777,602
Light Rail	$ 90,133,061	$126,636,223
Commuter Rail	$ 23,549,487	$ 23,549,487
Paratransit	$ 29,520,088	$ 29,520,088
Systemwide	$361,753,940	$411,483,400

Source: Nancy R. Edmonson, 2006

2.3 OTHER ALTERNATIVES CONSIDERED

In addition to the LRT Alternative, which was selected as the preferred alternative, a No-Build Alternative was considered in the Draft EIS. The No-Build Alternative is used to determine the environmental impacts of not making major transit improvements in the project corridor. Evaluating this alternative also helps determine whether the benefits to be realized by implementation of the Build Alternative are acceptable, considering environmental, economic, and social impacts and their mitigation costs. The No-Build Alternative must be given full consideration and a thorough evaluation in order to compare it adequately to the proposed project.

2.3.1 No-Build Alternative

The No-Build Alternative includes all improvements contained in the ***2006-2008 Transportation Improvement Plan*** (TIP), Congestion Management System (CMS) improvements mandated to address regional air quality, and DART's planned transit system improvements. The bus service improvements are intended to keep pace with population and employment growth, consistent with trends in the Northwest Corridor Study Area. The No-Build Bus Operating Plan for the corridor is the level of service expected to be provided in 2030 (**Figure 2-4**). Reassignments of vehicles among routes are made to balance service with demand, with no major changes beyond those in the ***DART Five Year Action Plan***.

This level of service assumes the service standard policies adopted by the DART Board of Directors as follows:

- Continue to provide service to all areas currently receiving bus service;
- Expand service consistent with DART's existing policy of servicing new demand;
- Maintain existing service standards and provide more frequent service to the extent warranted by increased ridership; and
- Add direct bus service to corridor and non-corridor major employment areas, with service originating from the transit centers.

All programmed rail transit improvements outside the Northwest Corridor Study Area are included in the No-Build Alternative. Transit improvements include the LRT line to Farmers Branch and Carrollton, which is currently in final design. Within the corridor no new capital transit facilities are planned that are not already in place.

Planned and programmed roadway improvements are also included in the No-Build Alternative. Highway improvements based on recently completed TxDOT MIS's are included in the network assumptions of the regional travel demand model. These projects are Loop 12 / IH 35E, SH 183 / West Fork, President George Bush Turnpike (SH 190), IH 35E North, and SH 114 / 121. The most probable level of improvement for each of these projects is included in the No-Build Alternative.