

commonly overlooked. *The Department of Transportation and Airport Landing Slots* looks at a situation in which the public sector provides a public good—airport facilities—under pricing policies that leave substantial excess demands at some airports. The result is extreme congestion and delay for passengers during rush hour periods of high demand. While the airports' recorded accounting costs may be recovered by their pricing, the rates charged for landing slots during periods of high demand fail to cover the costs of inconvenience and aggravation that passengers suffer. Such costs may not be as apparent as the cost of concrete for runways; but just as concrete has other beneficial uses that it could be put to, so passengers have better uses for their time than sitting in airport lounges or juggling their arrival and departure arrangements. In the face of these costs of overcrowding, the U.S. Department of Transportation has been considering auctions of tradable property rights in landing slots. The case examines the implications this would have for the profits of airlines, the welfare of passengers, and the fate of airline competition.

The West Side Highway Proposal (Abridged)

For most of the 1970s, New York City debated the future of its dilapidated West Side Highway. Planners suggested that it be replaced with a below-grade highway built on infill extending into the Hudson River. Construction of the 4.2 mile highway, known as Westway, and of the infill land surrounding it, was estimated at \$1.2 billion. Under the terms of the Federal-Aid Highway Trust Fund, the government would pay up to 90 percent of the cost, once the project was approved.

As final approval looked imminent in early 1978, opinion remained sharply divided in New York. Supporters of Westway heralded it as the best hope of the beleaguered city, "the twentieth century equivalent of Central Park." It would, they argued, revitalize Manhattan's West Side by getting some of the traffic off its congested streets, opening up the waterfront, and creating additional housing. More importantly, the billion federal dollars that would finance Westway was money the bankrupt city could not afford to turn down.

But its opponents claimed that rather than revitalizing the West Side, Westway would destroy it. A bigger highway, they argued, could only lead to more traffic and worse pollution. Furthermore, the hous-

ing it would produce wasn't needed, and the city would see only a small portion of that billion dollars.

All sides, however, seemed to agree on one thing: the decision on Westway was one of the most important the city faced about its future.

THE WEST SIDE HIGHWAY (WSH)

The West Side Highway, running from the southern tip of Manhattan to the New York City-Yonkers line, was built in the 1930s. Since that time, it has carried more vehicles into the city's central business district than any other highway, and more people daily than the area's largest commuter rail operation, the Long Island Railroad.

At its southern end, the WSH was an elevated structure running for four miles along the Hudson River, separating the waterfront and its piers and warehouses from the adjacent communities of Greenwich Village, Chelsea, Clinton, and Lower Manhattan. Because the WSH was restricted to automobiles, trucks were forced to use the streets in the neighboring communities, causing congestion and additional air pollution. In December 1973, after

This case was abridged by Professors José A. Gomez-Ibañez and Marc Roberts, of the Kennedy School of Government, from a previous case by Associate Professor R. E. Herzlinger of the Harvard Business School, with Arva Clark and Barbara Fried, research assistants. Copyright © 1977 and 1985 by the President and Fellows of Harvard College.

years of abuse and neglect, a portion of the elevated structure collapsed. Inspectors subsequently found much of the rest structurally unsound and closed the elevated portion to traffic for an indefinite period.

For years before the WSH's collapse, the state Department of Transportation (DOT) had been involved with the highway because of its frequent need for reconstruction. In 1969, the department recommended to the Federal Highway Administration (FHWA) that the WSH be designated as part of the National System of Interstate and Defense system which would make it eligible for 90 percent federal funding for any relocation or replacement project.

The FHWA accepted the WSH into their interstate system in 1971. The same year, the Urban Development Corporation (UDC), a state authority headed by Nelson Rockefeller's appointee, Edward Logue, recommended that the WSH be torn down and replaced with a new highway and mass transit system, both to be built on an elevated structure over the water beyond the existing shoreline.

Governor Rockefeller liked the UDC idea. This was another opportunity—like the South Mall in Albany and Radio City and Rockefeller Plaza in New York City—to change the face of the earth. New York's Mayor Lindsay was willing to go along with the project but was not anywhere as enthusiastic as the governor. He felt that something had to be done about the West Side Highway but he didn't know what, and he wanted the City Planning Commission rather than the highway department to control the project. A group of city, state and federal officials prepared a memorandum of understanding that established the West Side Highway Project (WSHP), under the guidance of a steering committee composed of representatives of 16 state and city agencies, but made it clear that the city of New York—not the state or a highway agency—would control the project and that the purpose of the highway was to act as a catalyst for the redevelopment of the west side of Manhattan.

THE WEST SIDE HIGHWAY PROJECT (WSHP)

During their early discussions in 1971, members of the informal planning group decided that the state DOT should hire a consultant to act as executive director of the WSHP. They wanted someone who could steer the project through the labyrinth of regulations governing the use of federal highway funds. They contacted Lowell Bridwell, head of a Washington, DC consulting firm that specialized in transpor-

tation projects. Bridwell, an intense and energetic man, had been a journalist, an adviser to a number of federal and state transportation agencies, and had served as FHWA administrator from 1961 to 1963, and later, undersecretary of the DOT.

When Bridwell met with the members of the informal WSH planning group in 1971, he made two suggestions. First, he recommended that a small "working group," rather than the larger steering committee, take responsibility for the project's ongoing work. Second, he recommended that preparation for public hearings become an immediate and continuing priority of the project team.

As a result of this meeting, the planning group asked Bridwell to serve as executive director of the WSHP. The project was formed as an independent organization by Bridwell and members of his firm on contract with the state DOT. It was not a legal entity or a government agency. Bridwell was given responsibility for the overall direction of the project and for all environmental analysis. He was also responsible for relations with the public and the press. Most observers agreed that Bridwell was the person most responsible for shaping the West Side Highway Project.

PREPARING THE DRAFT EIS

The staff's first task was to study the neighborhoods that would be most affected by any change in the WSH. Through statistics, interviews and other sources they developed a portrait of their "study corridor," which encompassed the western third of Manhattan below 59th Street, including the Hudson River waterfront; the residential communities of Clinton, Chelsea, and Greenwich Village; and the financial district of Lower Manhattan.

They found that the waterfront, once the hub of New York's economy, had in the last two decades become obsolete. As the shipping industry converted to containers, it had deserted Manhattan for roomier ports elsewhere and left behind empty and deteriorating piers and warehouses.

Clinton, an ethnically and economically mixed residential neighborhood at the northern end of the corridor, had long been under intense pressure from the Midtown central business district, which had singled it out as the "logical" area for future commercial expansion.

Lying to the south of Clinton was Chelsea, a neighborhood of brownstones and row houses, that had seen a renaissance in the 1960s, when upper in-

come families had bought and rehabilitated its run-down brownstones. The cost had been the dislocation of many of the average and lower income families.

Greenwich Village, the wealthiest of the three neighborhoods in the study area, was one of the most sought-after residential communities in the city. Demand for housing in the village exceeded supply and the only area left for expansion was the waterfront where redevelopment was impeded by deteriorating piers, and the dilapidated WSH.

All three communities, as well as the commercial district of Lower Manhattan, shared with the rest of the island the burdens of being the nation's busiest city: air pollution, noise, congestion, and bumper-to-bumper rush hour traffic. But conditions appeared to be further exacerbated in the study corridor by the necessity for trucks, barred from the WSH, to use city streets.

THE SELECTION OF ALTERNATIVES

While all of this information was being assembled, the project staff began to generate alternative plans for the West Side Corridor. Their first job was to decide the scope of alternatives to be considered. Said one member of the steering committee:

The FHWA said that the things that should be studied are the alternatives that can be funded and all other feasible alternatives. What they wanted to have included were other modes of transportation, such as mass transit. The city also wanted us to study every potential alternative for the West Side Corridor, but insisted we not go any further inboard than West Street. In other words, there was to be no West Side Highway in Greenwich Village. Since we had to have the city's approval, we agreed.

By the spring of 1974, the WSHP staff had generated from this list 17 alternative proposals for the West Side Highway Corridor which were delineated and described in a public document and released for public comment. With the advice of the City Planning Commission and further feedback from the community the WSHP staff then cut the list down to the following five alternatives:

- **Maintenance.** The existing WSH would be repaired and maintained as an operating facility.
- **Reconstruction.** Partial reconstruction of the existing WSH in order to correct major struc-

tural difficulties, to make the road safer, and to enable trucks to use it.

- **Arterial.** The existing WSH would be torn down and replaced with an at-grade (level with surrounding area) arterial roadway of lower traffic capacity, and a depressed (underground) mass transit facility.
- **Inboard.** The existing WSH would be torn down and replaced with a six-lane interstate highway with a public transit system in the median strip. Some parts of the highway and transit system would be depressed, and approximately 21 acres of new land would be created.
- **Outboard.** The existing WSH would be torn down and replaced by a six-lane, limited-access interstate highway constructed in landfill beyond the existing shoreline and covered in sections, with an adjacent mass transit system and a reconstructed West Street-Twelfth Avenue. Most of the existing waterfront facilities would be replaced with 243 acres of new landfill. Approximately 40 acres would be used for transportation facilities, 75 for recreation and open space along the river's edge, and 128 for housing and other development.

Only the outboard and inboard alternatives would be built as expressways, and thus they were the only ones that would meet the standards for 90 percent federal funding under the interstate and defense system. The remaining highways would be eligible for up to 70 percent federal funding under the federal primary or secondary road grant programs. Unlike the interstate grants, which are awarded on a project-by-project basis, the primary and secondary grants are distributed to states according to a formula and can be used by the state DOT for any primary or secondary highway within the state.

COSTS AND BENEFITS OF THE ALTERNATIVES

The staff summarized its findings in the Draft Environmental Impact Statement (EIS), as required by federal law. The Draft EIS did not provide a cost-benefit analysis of the five alternatives, but it did describe the impacts of each alternative on the environment, the economy, and the performance of the highway and traffic system. For some impacts, specific dollar estimates of the costs and benefits were provided, notably highway user cost savings and construction costs. Exhibits 1 and 2 provide a compilation of the staff's findings for the five alternatives

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EXHIBIT 1
West Side Highway Proposal
Costs and Benefits for Alternatives (Millions of Dollars)

Alternatives	Source of Funding	Total Construction and Right-of-Way Costs Undiscounted	Annual User Savings in 1995 ³	Annual Property Tax Gains in 1995 ³	Increase in Regional Income during Construction	One-Time Expenditures Avoided by City	Total Benefits Undiscounted
Maintenance ¹	70% federal 30% city or state	76	0	0	25 × 3 = 75	—	75
Reconstruction ¹	70% federal 30% city or state	227	26.2	0	65 × 3 = 195	—	1249.4
Arterial (with railway) ¹	70% federal 30% city or state	307	14.2	0	90 × 3 = 270	—	836.3
Inboard (with busway) ¹	90% federal (interstate) 10% state	1111	89.5	0	315 × 3 = 950	—	4529.8
Outboard (with busway) ²	90% federal (interstate) 10% state	1415 1356	86.5	76	400 × 3 = 1200	61.5	4658.4
Modified Outboard ²	90% federal (interstate) 10% state	(Row) 95 (Construction) 1009 (Ganesvoort) 52 Incinerator (Maintenance 200 40 years)	69.2	76	285 × 3 = 855	61.5	6068

EXHIBIT 1
 (continued)

Alternatives	New Housing	New Park/land	Morning Peak Hour Traffic (1995)	Local Street Traffic	Relocation	Air Pollution	Noise ^d Pollution	Water Pollution	Drivers Diverted to Transit Daily
Maintenance ¹	None	None	Volume exceeds capacity for most of highway Average speed hwy = 14.5 MPH Average speed streets = 6.0 MPH	No change	None	No change in CO, hydrocarbons, or NO	During const. -- 1 After const. -- 3	No change	None
Reconstruction ¹ None	None	None	Volume exceeds capacity for 1/3 of highway Average speed hwy = 18.4 MPH Average speed streets = 6.0 MPH	Insignificant change in cars; 9% fewer trucks	4 bldgs (13 businesses)	Slight increase in CO levels; no change in others	During const. -- 2 After const. -- 5	No change	None
Arterial (with railway) ¹	None	2.81 inland acres; Improved access to Battery Pk.	Volume exceeds capacity for 1/3 of highway; near capacity for rest Average speed hwy = 12.1 MPH Average speed streets = 5.7 MPH	Insignificant change in cars; 6% fewer trucks	None	Largest increase in CO levels, exceeding federal standards	During const. -- 3 After const. -- 4	No change	9000
Inboard (with busway) ¹	none	21 acres of water-front park	Volume exceeds capacity for 1/3 of highway Average speed hwy = 22.6 MPH Average speed streets = 6.8 MPH	Slightly fewer cars; 9% fewer trucks	48 bldgs. (89 residents 91 businesses) 18 pier tenants	Slight decrease in CO (by diverting truck traffic)	During const. -- 5 After const. -- 2	Slight improvement from smoothing shoreline	10,500
Outboard (with busway) ²	128 acres for future development	75 acres of waterfront park	Volume exceeds capacity for 1/3 of highway Average speed hwy = 23.6 MPH Average speed streets = 6.8 MPH	Slightly fewer cars; 12% fewer trucks	46 bldgs. (89 residents & 101 businesses) 23 pier tenants	Slight decrease in CO (by diverting truck traffic)	During const. -- 4 After const. -- 1	Slight improvement from smoothing shoreline	10,500
Modified outboard ²	101 acres for future development	93 acres of waterfront park	Same as Outboard	Same as Outboard	(109 residents and 92 businesses) 15 pier tenants	Same as Outboard	Same as Outboard	Same as Outboard	Same as Outboard

¹Based on construction to 72nd St.

²Based on construction to 42nd St., including transit system construction (without transit right-of-way costs).

³Annual benefits presumed to accrue for 40 years, the expected lifetime of the highway.

⁴1 = least pollution

⁵ = greatest pollution

EXHIBIT 2

West Side Highway Proposal

Coast and Benefits That Are Estimated in Dollars (Millions of Dollars)

	Maintenance	Reconstruction	Arterial (w/Railway)	Inboard (w/Busway)	Outboard (w/Busway)	Modified Outboard
(A) Construction and right of way costs (federal, state and city)						
Year 1	1	18	20	92	125	120
Year 2	22	14	25	123	159	152
Year 3	18	16	43	101	106	102
Year 4	11	19	40	119	144	138
Year 5	8	20	39	153	152	146
Year 6	8	23	34	157	209	200
Year 7		27	25	149	191	183
Year 8		19	28	141	165	158
Year 9		24	24	53	112	107
Year 10		19	29	23	52	50
Year 11		19				
Year 12		9				
Total:	76	227	307	1111	1415	1356
(B) Annual user savings in 1995						
	0	26.2	14.2	89.5	86.5	69.2
(C) Annual land value gain in 1995						
	0	0	0	0	76	76
(D) Regional income gains (one time, during construction)						
	75	195	270	950	1200	855
(E) City expenditures avoided (one time)						
	0	0	0	0	61.5	61.5
Undiscounted totals, 40 year life						
Construction cost	-76	-227	-307	-111	-1415	-1356
User savings	0	1048	568	3580	3460	2768
Property tax	0	0	0	0	3040	3040
Regional income	75	195	270	950	1200	855
City expenditures	0	0	0	0	62	62
	-1	1016	531	3419	6347	5369
Discounted totals (present values), 40 year life, 10 percent discount rate per year						
Construction cost	-56.9	-128.1	-189.1	-699.7	-877.9	-841.3
User savings	0.0	74.2	48.7	306.8	296.5	237.2
Property tax	0.0	0.0	0.0	0.0	260.5	260.5
Regional income	56.1	110.0	166.3	598.3	744.5	530.5
City expenditures	0.0	0.0	0.0	0.0	38.2	38.2
	-0.7	56.2	25.9	205.4	461.7	225.0
B/C ratio	0.99	1.99	1.14	1.29	1.53	1.27

described in the Draft EIS along with a sixth, a slightly modified version of the outboard, proposed in the Final EIS.

Costs and benefits were computed according to OMB procedures, which require that both be expressed in constant (in this case 1974) dollars, and then discounted at the rate of 10 percent per annum.¹ Annual benefits were accrued for 40 years, the assumed life span of the highway. The "user cost savings" represent the time savings, where one person-hour = \$3.64, and operating and accident cost savings resulting from the faster and smoother flow of traffic.

The anticipated regional income is derived from the multiplier effect on direct construction wages by which one dollar of wages paid into a region generates additional expenditures, wages, and profits in other sections of the economy. Contemporary studies indicate that multipliers range from 2.0 for small metropolitan areas to 3.2 for larger areas. The multiplier the project staff used for New York City was 3.0, which they considered a conservative estimate.

The city's income from the 200 acres of developable land created by the modified outboard alternative was derived by assuming 200 dwelling units and associated commercial activities and parking per acre. As explained in the Final EIS:

Utilizing current values for construction, financing, maintenance and rents, a market value of just over \$1 million per acre was calculated. Each acre of land plus the more than \$7.5 million worth of buildings assumed to be on it generated taxes of about \$375,000 per acre annually, under the constrained development conditions [laid down by the city in agreement with local residents]. It has been assumed that each new acre of land created . . . (except those used for highway purposes) would have this value, including the park, industrial and community service landfill parcels. Since the decision to forego the monetary benefits of using the land for residential purposes is assumed to be a rational one, the non-monetary benefits received by society from the other uses are equal to or greater than, the benefits of residential development. (p. 153).

The traffic projections were produced after months of study by the project staff and technical con-

¹Discounting accounts for the fact that a dollar in the future is worth less than a dollar in the present. This is true even if there is no inflation since today's dollars can be invested to produce more in the future. With a 10 percent interest rate, for example, 91 cents today would increase to \$1.00 next year. Hence, the present value of receiving \$1.00 a year from now using a discount rate (another term for an interest rate) of 10 percent is approximately 91 cents.

sultants, and were critical in the design and ultimate approval of a replacement for the WSH. The forecasts were based on the current volume, of all daily person-trips into the central business district (CBD), as well as the capacities of the existing road network. With that data, a computer program replicated existing traffic conditions, and the results were checked against observed conditions. Then, the staff projected the effect that future changes in land-use patterns would have on the total volume of vehicular traffic into the CBD. They predicted a seven percent increase by 1995, the project's target year, which they later revised to five percent when preparing the Final EIS. The program was changed to reflect that increase, and then was used to stimulate traffic conditions for 1995 on each alternative road network proposed.

It was not the purpose of the Draft EIS to select a particular alternative but rather to outline a number of alternatives so that public agencies and concerned individuals could comment on the analysis. Only in the Final EIS was a specific alternative to be recommended. Nevertheless, the evaluation of the Draft EIS seemed to suggest that the "inboard" and "outboard" alternatives were probably superior to all others. Although the physical environment of Manhattan had more problems than any one highway project could solve, the inboard and outboard alternatives were judged to add the least of its air, water, and noise pollution, largely because they would remove the most traffic from local streets and place the highway some distance from existing shorelines and the new highway, for parks and housing. The economy of the area would be stimulated the most by these two alternatives, since they would most improve the accessibility of the Manhattan CBD and would create the most jobs during construction. Finally, the inboard and outboard alternatives were estimated to provide greater reductions in highway user time, operating, and accident costs than the other alternatives. The inboard and outboard alternatives cost more to construct, but the benefits seemed to be larger too.

PROCESS OF SELECTING FINAL ALTERNATIVES

Several of the staff on the City Planning Commission who were most actively involved described the process leading up to the selection of the final alternatives in the Draft EIS:

We took every community's concerns into account. At one point, we changed the highway design in the Outboard proposal in response to suggestions from the Greenwich Village people.

The project staff was appalled that nontechnical people were moving the road. But when we asked why it couldn't be changed, they couldn't come up with reasons. Then we were able to show people in the community that we had made the change they requested.

This was a political as well as a technical document. We went over every word for nuances. We were selling two things—a process and a vision.

We held more than 500 public meetings. Bridwell is a brilliant man. . . . He knows how to build a highway and all that is involved. That is essential for our credibility, which is always on the line. John Zuccotti (chairman of the New York City Planning Commission) knows how to work with people. He doesn't believe in big projects for their own sake, in "sacrificing for the greater good." To understand people's needs, he feels you should listen, work with them, become part of the process yourself. That's the key, that's what he did.

Graham Bailey, who replaced Russell Eckloff as area engineer in the FHWA division office in 1975 after completion and circulation of the Draft EIS, described his unit's role in its preparation:

Our office carefully reviewed the input and criteria used in the various technical studies that supported the conclusions of the Draft EIS in order to determine the reasonableness and accuracy of the data which is fed into the mathematical models as well as the propriety of the model itself. Many meetings and discussions were required before the necessary input data could be agreed upon.

THE APPROVAL PROCESS FOR THE DRAFT EIS

In accordance with standard practice at USDOT, the Draft EIS was sent up the chain of command in the FHWA and the USDOT for review, comment, and approval. Since the FHWA division office had been involved in the WSHP from its inception, its staff was able to approve and forward the Draft EIS quickly to the FHWA regional office for review. The FHWA regional office also acted quickly, since the division office had been so closely involved.

After review by FHWA's divisional and regional offices, the Draft EIS was sent to the Environmental Programs Division in the headquarters office of FHWA and to the assistant secretary for environment, safety, and consumer affairs in the USDOT.

Both offices made comments for consideration in the preparation of the Final EIS. At the national office, Robert Gausman, highway engineer for environmental programs, directed the review. His office, he claimed, had the agency's real expertise on the matter:

At the division and regional level, the people aren't generalists. They know the area, the city well, but aren't as expert in the particular technical fields as the people in Washington. Our office reviews the Draft EIS from a technical standpoint. We look at the results, to find out if the answers to technical questions are reasonable. Our technical people do not develop their own models during the review, to check the models used in the preparation of the draft, but they are in contact with people around the country who are developing models, and they know which models are relevant and which are not. This is true for air quality, noise, traffic—all the technical areas.

PUBLIC RESPONSE TO THE DRAFT EIS

To most observers, it seemed likely that the WSHP staff and the city might take only two alternatives seriously—the inboard and the outboard proposals—since these were the only two that would be funded at a 90 percent level by the federal government, and that required *no city* funds. Both proposals had large groups of supporters, including the construction industry, labor groups, and much of the city's financial community. Both proposals also engendered controversy.

Opposition came from several quarters, including environmentalists who were suspicious of the claim that larger highways would lead to cleaner air; mass transit advocates who felt that the billion dollars might be better invested in improving the city's public transit system; and community residents who feared a sudden large-scale redevelopment would fundamentally change the character of their neighborhoods.

Mass Transit Trade-In. Mass transit advocates, among them Bella Abzug, congresswoman for part of the West Side, proposed that the city build a new subway system in the WSH Corridor. To do this, the city applies for an "interstate transfer," with the approval of the governor. If the secretary of USDOT determines that the section of highway in question is not essential for completion of a unified and connected interstate system, the federal share of the esti-

mated cost to complete that section can be used to construct other roads or transit projects. For transit projects, an amount equal to that federal share is transferred to and administered under the jurisdiction of the Urban Mass Transportation Administration (UMTA). Participation by UMTA in transit projects is at the ratio of 80 percent federal and 20 percent others. This 20 percent can be a state contribution or shared by the state and city or other governmental entity.

The WSHP staff had in fact considered a trade-in for transit funds as another alternative to the 17 it presented, but had discarded the idea before the list was made final. One WSHP staffer explained:

We did a lot of work on the possibility of a trade-in of Federal-Aid Highway Trust funds for mass transit funds. To get the same amount of money for mass transit as for a highway, the city would actually have to raise more money because the ration is 80 percent federal funds to 20 percent city funds. The main argument against mass transit was a fiscal one.

Others argued that experience showed that new subways did not divert people from using automobiles. Therefore new mass transit would not relieve the traffic congestion that was driving companies out of the area.

The Discount Rate. The most detailed critique of the Draft EIS on behalf of community residents was provided by several consultants working for "Combo," an alliance of community boards 2, 7, and 9—the local planning boards of the communities adjacent to the West Side Highway. The consultants were paid out of the budget of the WSH project. The Combo critique questioned virtually every aspect of the Draft EIS, but perhaps the most widely publicized criticism was that the Draft EIS's own figures showed that the benefit-cost ratios of the inboard and outboard alternatives were less than 1.0, while the ratio for the more modest "arterial" alternative was more than 1.7.

Combo argued that WSHP ignored the effects of the recent rapid inflation in construction costs by estimating all costs at 1974 prices and then using a 10 percent discount rate. Instead they proposed that construction costs should be inflated at 15 percent per year (the rate of construction price increases in recent years). All other benefits and costs (including the value of time and auto operating costs) would increase at about six percent per year, Combo argued, and the discount rate should be six percent. Combo

claimed that using their assumptions about inflation and the discount rate (but WSHP estimates of user benefits and capital costs), the large highways no longer had favorable benefit/cost ratios:²

Alternative	Combo Estimate of B-C Ratio	WSHP Estimate of B-C Ratio (Exhibit 3)
M(aintenance)	N.A.	.99
R(econstruction)	1.0	1.44
A(arterial)	1.70	1.14
I(nboard)	.89	1.29
O(utboard)	.64	1.53

Combo further argued that their computation is conservative (in favor of the big highways) since use benefits do not begin to occur at their full value until some 10 years after costs being incurred. Also, since the Draft EIS omitted highway maintenance costs, they were omitted from Combo's calculations too.

Travel Forecasts. Furthermore, Combo said, the Draft EIS may have overestimated benefits to users because of errors in travel and traffic forecasting methodology. Combo was particularly concerned that the amount and distribution of travel employment and population did not vary with highway alternatives—there was no induced travel. Combo argued that each of the proposed replacements for the WSH would generate additional traffic in proportion to the time/cost savings its increased capacity offered users. Because the WSHP staff failed to add this increase to the traffic growth they projected for 1995 for all five alternatives due to changes in land use, Combo argued that the staff had underestimated future traffic by as much as 200,000 vehicle miles traveled a day, and hence greatly underestimated noise and air pollution and greatly overestimated user savings. In conclusion, Combo said: "The travel forecasting methodology of the WSHP has only demonstrated that a fixed amount of highway travel can be better accommodated on a larger highway network than on a smaller highway network."

Quality of Life. In addition to the financial and forecasting arguments put forth by Combo,

²Combo used a capital recovery factor method to calculate annualized benefits and costs in a typical year (1995) assuming a 40-year life for the highways. The authors of this case were unable to reproduce the benefit/cost ratios that Combo reported, however.

community residents voiced concern about the effect the proposed highway would have on the quality of neighborhood life. Construction of either the in-board or outboard alternatives would take a minimum of 12 years, during which time traffic would be further disrupted, and noise and dirt continually generated by construction equipment. In addition, many feared that the development of large new tracts of land would draw too many residents and businesses out of adjacent communities. Others, pointing to the number of units in new housing developments such as West Village Housing that were still unoccupied, suggested that it might draw too few, thereby creating a wasteland of deserted or half-completed buildings.

But perhaps the central concern of residents was that, whatever the air, noise, and traffic analyses might show, the net result of building a larger highway was to make the city more hospitable to cars and less hospitable to people. Jane Jacobs, a well-known critic of urban master planning, voiced her concern in an interview in *New York Magazine*.³

Westway [the modified outboard alternative proposed in the Final EIS] is only one small piece of a plan for an overwhelming highway network for Manhattan that would, piece by piece, Los-Angeize New York. It's an old plan that dates back to 1929, pieces of [which] keep surfacing every few years. Nobody would ever consent to . . . doing the whole thing, yet piece by piece it gets done.

If Westway goes in, the Lower Manhattan Expressway proposal will be revived. . . . And that would create pressure to rebuild the rest of the West Side Highway north of Westway to interstate standards, . . . cutting into Riverside Park. And there would be new crosstown traffic routes like 34th Street and so on up the island. Westway will never be an isolated highway segment. It's like a tree trunk that has to grow branches.

Furthermore, it's nonsense to say that this highway is going to remove traffic from the city's streets. It's got to have its ramps to draw traffic onto and off city streets, until the system has invaded the entire city. Plans like Westway are death sentences for neighborhoods. Before the first building falls, the plan enforces deterioration, stops investment in existing businesses.

Jacobs also argued that the new bankrupt city did not have the money to finish and maintain any newly created park land; that most of the much-touted construction money would actually go to jobs outside the region; and that the West Side, rather than deteriorating as proponents of the highway claimed, had begun a natural and self-financed revitalization that would continue unless the interstate were built.

Instead of building an interstate highway, Jacobs proposed a trade-in of the Westway money, for transit rehabilitation plus a modest rebuilding of the West Side Highway. According to a six-month Sierra Club study, it would deliver 103,000 man-years of employment, both inside and outside of New York City; Westway promises only 78,000 and most of those will be outside the region—in plants manufacturing the steel, cement, and other component parts and materials.

THE FINAL EIS

The project staff favored the outboard alternative. John Zuccotti (who had left the City Planning Commission to become deputy mayor in the Beame administration, but who remained an influential member of the "working group") was responsive to the concern of some neighborhoods that the outboard plan created too much new land. What evolved after an extensive series of meetings, studies and negotiating was a modified outboard that would create 110 acres of infill land for real estate development, rather than the 128 originally planned. The plan was endorsed by Gov. Hugh Carey and Mayor Abraham Beame in March 1975. According to Robert Bagt, assistant director of the New York State budget division:

We supported the Westway proposal for several reasons, all obvious. One is economic development—absolutely vital. Jobs are crucial. If we didn't have a fiscal crisis in New York City, it might have been a more difficult decision to make, but given where the city is, I don't think we had any choice. There were other reasons—the flow of people in and out of the city—primarily we're talking about rehabilitating an area. We're talking about a government decision like many government decisions, involving many city and state agencies, but into that mix we're pouring something that is unique in the history of municipal government—New York City's financial crisis.

³"How Westway Will Destroy New York," February 16, 1978, *New York*, pp. 30-34.

The Final EIS was published in the summer of 1976, and contained the following description of Westway:

Like the original Outboard, the Modified Outboard was planned as a catalyst for major physical changes on the West Side. It will function as a mechanism to transform the waterfront by eliminating the present barrier effect of the elevated highway structure, and by removing all existing deteriorating or inactive maritime facilities south of 34th Street. Its most dramatic feature will be the creation of 181 acres of new landfill, and the reconfiguration of 53 acres which presently exist between the pierhead and bulkhead lines. Of this, 31 acres will be utilized by transportation facilities, 93 acres will be public park land along the river from Lower Manhattan to Midtown, and the remaining 110 acres will be available for new development. (p. 146)

In the Final EIS the West Side Highway Project staff also responded to the criticisms of the Combo report. They argued that Combo made several errors in calculating its benefit-cost ratios:

Although the Combo report asserts that their benefit cost calculations are conservative and "in favor of the big highways," in fact, the opposite is true, the calculations are biased against the big highway. Combo increased the construction costs for the alternatives by 15 percent per year to 1980 to account for inflation. In addition, the costs of the alternatives were increased by over 15 percent, and benefits were increased by only six percent per year. This approach seriously reduces benefits in comparison to costs.

The [US] Office of Management and Budget in their circular #A-95 recommends that for nearly all federally funded projects the annual percentages applied to cost be the same as those applied to benefits. This approach assumes that inflation will affect both costs and benefits in the same manner. (FEIS, Section 6: "Comments and Responses on the DEIS," pp. 19-20.)

The project staff also responded to Combo's charges that they had failed to consider "induced traffic" in their forecasts. They agreed that the theory that highways generate their own demand was basically sound, and said that they had indeed con-

sidered the possibility of induced traffic when they did their original projections. However, they concluded that two factors unique to Manhattan made that potential so slight as to be insignificant: 1) that all traffic entering Manhattan had to use river crossings (bridges or tunnels) that are already used to capacity in peak hours, and 2) that on- and off-street parking in the CBD was already almost filled to capacity during the day, and the city intended to further limit future parking supply in an effort to relieve traffic congestion. Both factors, the staff argued, would put a ceiling on the volume of vehicular traffic in Manhattan whichever replacement was built for the WSH. The net effect of a larger highway, therefore, would be to decrease time and cost for the fixed volume of traffic that would use it.

With the publication of the Final EIS, Westway was ready to be sent through the layers of the FHWA, for final location approval by the secretary of DOT.

THE SECRETARY'S DECISION

President Ford appointed William Coleman to the post of secretary of transportation in 1974. (See Exhibit 3 for USDOT organization chart.) The Westway proposal reached his desk in December 1976, about one month before Jimmy Carter would become president. Coleman asked Judith Connor, his assistant secretary for environment, safety, and consumer affairs, to get ready to brief him on all details. Said Connor:

I felt it wasn't right for the Office of the Secretary to get into technical analyses; we only had to be sure the analyses were done well. We shouldn't be second-guessing our highway people. I spent a great deal of time with Bridwell and his staff to be sure they had done the best possible job on predictions. I was satisfied that present congestion in the area, with the absence of a highway, made for worse pollution than the development of a highway would.

Some of my staff had their doubts about the project's costs, but for years we had been pressuring FHWA to internalize the costs of making highways environmentally compatible. Here was the perfect example of how to do it in an urban area. A substantial portion of Westway's costs would be involved in doing so. They'd adopted every principle we'd advocated—dedicated lanes for heavy traffic, bridle paths, bicycle paths, parks, etc. The federal

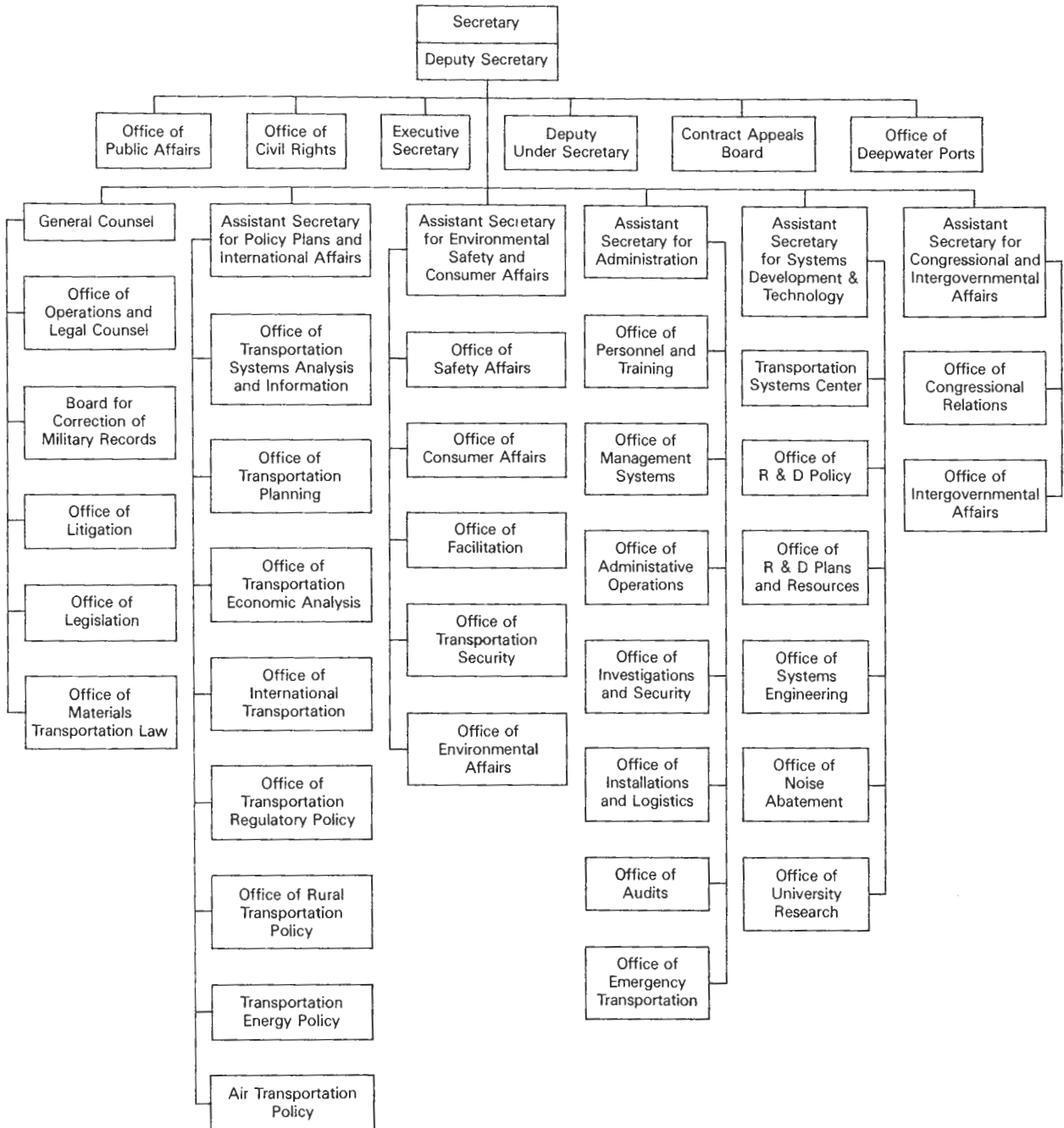


EXHIBIT 3
 The West Side Highway Proposal
 Present Organization
 Department of Transportation
 Office of the Secretary

government's policy was to make highways environmentally compatible. On that basis, I recommended to Secretary Coleman that he approve it. What else could we do?

Members of New York City's financial, labor, and political communities voiced their vigorous sup-

port of Westway in a number of meetings with the secretary. In 1975, David Rockefeller, chairman of the board of the Chase Manhattan Bank, and Harry Van Arsdale, president of the Central Labor Council of the AFL-CIO, had become co-chairmen of a group of 25 business, labor, education, and cultural leaders who acted as a lobby for the approval of

Westway. It was as spokesman for this group that Rockefeller and Van Arsdale had met on numerous occasions with Coleman. On December 30, 1976, the two men signed a letter to the secretary in which they identified 11 broad categories of private investment, for a total of \$7.378 billion, that would accompany the development of the new land in the Westway proposal. In addition, Rockefeller and Van Arsdale promised—at Coleman's request—that apprenticeship opportunities, skilled training slots, and jobs would be open to minorities, including blacks, Hispanics, and unemployed youth, during the construction of Westway, if approved, and that the project would be completed without strikes or other work stoppages.

On January 4, 1977, Secretary Coleman came to New York City to announce his approval of the WSH proposal. His statement on Westway noted:

I have based this decision on my review of the history documents submitted to me, including the Final Environmental Impact Statement, and the relevant policy and statutory considerations. In addition, an important factor in my decision is the strong support given to the proposed project by the governor of the state of New York, the mayor of the city of New York, many (although not all) of the local elected officials, and the leadership of the private business and labor communities. Finally, it is my judgment that the extensive opportunities for community participation in the planning process for this highway have resulted in the development of an alternative that best reflects, protects, and advances the concerns of the affected citizens.

Westway was now cleared for final design. In the fall of 1977, Ed Koch was elected mayor of New York City. During the campaign he had announced his opposition to Westway and promised it would never be built if he were elected. In its stead, Koch urged a trade-in for mass transit funds. As Koch took office in January 1978, everyone awaited his decision. If he were to give final design approval to Westway, only two obstacles would remain to its construc-

tion: an air-quality permit from the state Department of Environmental Conservation, and a permit for the landfill from the Army Corps of Engineers.

In the year since location approval had been given, neither Westway's supporters nor its critics had lost their customary zeal. Said Lloyd Kaplan, chief aide to John Zuccotti:

If the Westway project is killed, once-in-a-lifetime opportunities for spurring the economy and opening up the waterfront will be killed along with it.

Said Jane Jacobs:

No mayor will make the difference to New York that this highway will make. If Koch does nothing more than kill Westway, he'll be one of the greatest mayors of the city.

Koch remained intransigent throughout the early spring. On April 14th, after a three-hour meeting in Albany, Koch and Gov. Carey held a news conference to announce that they had reached a settlement. Carey pledged to maintain the city's 50 cents transit fare through 1981, to make \$80 million available for mass transit improvements, and to make the new waterfront area a state park, finished and maintained by state funds, in return for Koch's agreement that "The Westway shall proceed." Koch, in response to charges of betrayal, termed the decision "inevitable." "I am not able to change the governor's position," he said.

As news reached New York City, Sen. Moynihan said, "Well done!" and numerous union officials expressed their delight with the agreement. State Rep. Ted Weiss, nine members of the city council, and several other local elected officials charged Koch had "sold out to Carey," saying that the transit money Carey had promised would have been forthcoming to the city anyway under legislation pending in Congress. Other Westway opponents vowed that, if all else failed, they would delay its construction for years with litigation in courts.

ASSIGNMENT FOR CLASS DISCUSSION

Imagine that you are a staffer to Transportation Secretary William Coleman and that he has asked you to evaluate the benefit-cost analysis in the FEIS and explain to him whether it supports the recommendation to build the modified outboard expressway rather than one of the smaller