



Wilbur Smith Associates

BRYANT TERRY BROTHERS, P.E.

Senior Transportation Engineer

EDUCATION

B.S./Civil Engineering/North Carolina State University, 1965.

M. S./Transportation Engineering/North Carolina State University, 1967.

Minor in Urban Planning, University of North Carolina at Chapel Hill.

REGISTRATION

Professional Engineer: North Carolina, Hawaii, and South Carolina.

PROFESSIONAL EXPERIENCE

2000 - Present **Project Manager, Raleigh, NC**
1987 - 2000 **Manager WSA Honolulu Office**
1969 - Present **Wilbur Smith Associates**

Mr. Brothers is a Senior Transportation Engineer with over 37 years of experience with Wilbur Smith Associates. He has vast experience in project management, quality control, traffic engineering, traffic circulation, parking studies, bus and rail studies, regional and corridor transportation planning, transportation systems management programs, transportation plans, traffic impact studies and bicycle and pedestrian studies.

NORTH CAROLINA AREA

North Carolina Statewide Transportation Plan. Deputy Project Manager for major update of the Statewide Plan, which encompasses the roadway, public transit, rail, aviation, and port systems. Study includes needs assessment for maintenance, modernization, and expansion of the present systems, as well as the assessment of alternative scenarios for resource allocation through year 2025. The Plan update process includes extensive outreach efforts to internal and external stakeholder groups, and to the general public.

Carolina Beach North End Circulation Study; Carolina Beach, NC. Project Manager responsible for developing a short-range plan to address traffic operation problems and to improve bicycle and pedestrian circulation in the Downtown commercial area and the North End

beach hotel/condo area to accommodate summer visitor activities. The plan emphasized actions to improve the visual appeal of the visitor-oriented area and assist in traffic calming. Context sensitive solutions such as lane reductions, traffic circles, bicycle lanes, sidewalks, and on street parking were implemented as part of this project.

Transportation Study; Brevard, NC. Project Manager, directed study of roadway, parking, and bicycle needs in the City of Brevard. Long-range roadway alternatives were developed and evaluated in conjunction with the development of a new City land use plan I. WSA also analyzed alternative traffic circulation scenarios for the Downtown area, developed access management guidelines for the City roadways, developed a Bicycle Plan element, and developed a plan for parking and loading facilities in the Downtown area.

Long-Range Plan; Pinehurst, NC. Project Manager, directed development of transportation element of the comprehensive plan, with emphasis on accommodating traffic growth while preserving unique village environment.

Other studies included:

- Wake Forest Baptist Medical Center Parking Needs Study, Winston-Salem
- Moses Cone Memorial Hospital Parking Plan, Greensboro
- Paramount Square Traffic Impact, Morrisville
- High House Road Traffic Study and Signal Design, Cary
- US 70 Widening Project, Traffic Studies, Rowan County
- Trinity Road Extension Project, Traffic Studies and Signal Design, Cary
- On-Call Traffic Engineering Services, City of Mebane, NC.
- Carolina Beach North End Traffic and Circulation Study, Town of Carolina Beach.

HAWAIIAN / PACIFIC AREA

Transportation Planning Experience

Kahului Airport Ground Transportation Studies; Maui, HI. Project Manager, directed analyses of the preferred plan and five improvement alternatives, which included a new airport access road, an interchange, and closure or relocation of several roadways in the airport area. Directed analyses of interchange alternatives, including benefit-cost analyses.

Barbers Point NAS Reuse Plan; Honolulu, HI. Project Manager, directed formulation and assessment of roadway plans, including construction cost estimates, for alternative land use plans for the reuse of 2,000 acres to be vacated by the Naval Air Station.

NAS Agana Base Reuse Plan EIS; Guam. Project Manager, directed traffic impact analyses of alternative land use plans and roadway networks for reuse of the 1,825 acres of the former Naval Air Station. Site includes present Guam International Airport facilities.

Central Oahu Lands Master Plan Transportation Study; Honolulu, HI. Project Manager, directed planning of new roadways and interchange improvements for development of 1,340 acres of Castle & Cooke lands along the H-2 Freeway. Study included development of preliminary plans and cost estimates for new interchanges, interchange modifications, and new roadways.

Transportation Systems Management (TSM) Study; Oahu, HI. Project Manager, directed multi-disciplinary team effort to evaluate existing TSM actions for possible improvement; research other potential actions for possible implementation; assess options; and develop a detailed implementation plan. Strategies selected for in-depth analysis included municipal parking supply controls, employer parking pricing, pricing of automobile use, freeway operational measures such as ramp closures, jitneys, premium subscription bus service, and educational system actions.

Hali 2000 Alternatives Analyses Study, Honolulu, HI. Project Manager, directed analyses of light rail, rail rapid transit, bus and highway alternatives for the development of the long-range transportation plan. Tasks included

traffic and patronage forecasts, capital and operating costs, cost-effectiveness analyses, and environmental assessment.

Southern Roadway Development Project, Sri Lanka. Project Manager who prepared design day and peak hour traffic forecasts for a new 100-kilometer long freeway along the southeast coast of Sri Lanka, including ramp volumes and traffic on the roadways providing access to the project. Evaluated roadway improvements needed for interchange areas and connecting roadways.

Talikud Island, Mindanao, Philippines. Project Manager who developed plans, capital costs, and operating costs for high-speed ferry connection between planned resort/residential community and Davao City.

Comprehensive Island-Wide Bus Study; Honolulu, HI. Project Manager, directed all elements of the study, which encompassed on-board and telephone market research surveys, development and analyses of service expansion plans, facilities planning, and implementation programming.

H-1 Freeway Contraflow HOV Lane Design; Honolulu, HI. Project Manager, who prepared HOV lane usage forecasts to guide decision on vehicle occupancy requirements, conducted impact analyses, and planned HOV lane entry/exit locations.

Waikiki Transportation Improvement Project; Honolulu, HI. Project Manager, directed analyses of improvement potentials for major entry roadways to/from Waikiki and selected problem locations within Waikiki and development of preliminary design plans. Also included area-wide analyses of parking needs, on-street loading zones, and tour bus routings.

Keeaumoku Street System Improvement Project, Honolulu, HI. Project Manager, directed analysis of traffic conditions, formulation of improvement plans, and preparation of design plans for this major street connection between the Ala Moana Center, H-1 Freeway, and Makiki area.

Kahului Airport Improvement EIS Transportation Study; HI. Project Manager, directed analyses of traffic impacts of the preferred plan and five alternatives for a 20-year plan of improvements for the Airport. The analyses considered a new airport access road, interchange construction, addition of international facilities, and the closure, relocation, and/or extension of several roadways in the airport area.

Waikiki/H-1 Freeway Connector Feasibility Study; HI. Project Manager, directed study of alternative roadway alignments, bridge crossings, and freeway ramp modifications to provide a direct roadway connection along the Manoa-Palolo drainage channel.

Honolulu International Airport Master Plan; Honolulu, HI. Project Manager, directed analyses of area roadway needs and formulation of roadway improvement measures for expansion of airport activity levels through Year 2010. Study included development of access plans for new recreational and light industrial areas to be developed on new landfill adjacent to the airport.

Changi Airport Road Study; Singapore. Project Manager who developed and analyzed alternative roadway access and circulation systems to serve existing terminal and new terminal complex.

Hawaii Convention Center Complex; Honolulu, HI. Project Manager, In the planning phase, directed analyses of traffic impacts, formulation of site circulation and parking plans, and preparation of street improvement plans for the three million square foot multi-use commercial and residential project adjacent to the Waikiki area. In the design phase, directed preparation of plans and specifications for street widening, signing and striping, and modified and new traffic signals. Prepared study of traffic, parking, shuttle bus, and pedestrian access requirements and management actions for input into the transportation operations manual for events, with the guidelines addressing events with between 2,000 and 15,000+ attendees.

Makakilo-Palailai Interchange Improvements Traffic Study Kapolei, HI. Project Manager who directed analysis of planned new ramp connections on freeway and surface street traffic conditions using Synchro and Corsim. The

analyses were used to modify ramp configurations and intersection plans to improve area accessibility and mitigate adverse traffic impacts on adjacent streets.

Keahuolu Lands, Queen Liliuokalani Trust, Kailua, Kona. Project Manager responsible for development of circulation plan, local alignment of regional roadways, and traffic impact analyses for as part of the master plan for 4,000 acres of Trust lands adjacent to the Kailua business center. Planned development included regional shopping center, governmental center, light industrial areas, and residential communities.

Kai Marina Area Transportation Plan; HI. Project Manager who conducted traffic impact analyses, developed roadway improvement plans, and planned developer-sponsored rideshare program to accommodate 1,100 approved and 1,800 additional residential unit project in East Honolulu.

Kaka'ako Redevelopment Area; Honolulu, HI. Project Manager responsible for traffic impact study and roadway improvement plans for redevelopment of the one-square mile area with 27,000 employees and 17,000 residents adjacent to the Honolulu financial district.

City of Kapolei Transportation Studies; Oahu, HI. Project Manager who directed series of studies to evaluate alternative roadway plans and interchange designs for the development of a new second city on Oahu. Included traffic impact studies to identify the incremental roadway needs with the development of individual government buildings and private commercial and recreational facilities.

Pearl City Peninsula Traffic Improvement Project; HI. Project Manager who conducted traffic assessment of modifications to present access road and of alternative alignments for new roadway to Navy operations and housing areas.

Kawaihae Road Bypass Project; HI. Project Manager who conducted traffic assessment and benefit-costs analyses for five roadway alternatives between the Kawaihae Harbor area and Waimea for input to project Alternatives Analysis/Draft EIS.

Additional Traffic Studies:

- Keeaumoku Superblock Mixed-Use Project, Honolulu.
- Ko Olina Resort, Oahu, - 400-acre Phase II expansion.
- Pearl Plantation, 250,000 SF commercial development near Aloha Stadium, Honolulu.
- Kiawe Terrace Apartments, Kihei, Maui.
- Hilton Hawaiian Village Traffic Circulation Study, Waikiki.
- Universe Plaza, 900,000 SF mixed-use project,
- Kona Industrial Park 100-acre expansion, Kailua-Kona, HI.
- Kaalakei Retirement Village, Hawaii Kai.
- Fort DeRussy Armed Forces Recreation Center, Waikiki.
- Waikakalaua Gulch, 500-unit military housing project, Mililani, Oahu.
- Kalama Valley Community Shopping Center, Hawaii Kai.
- Block J Redevelopment Project, Downtown Honolulu.
- Kapalawai Resort Traffic Study, Kauai.
- City and County of Honolulu Corporation Yard, Sand Island.
- Iao Intermediate School, Wailuku, Maui.
- Kapaa Intermediate School, Kauai.
- Ward Avenue Extension Project, Honolulu.
- Keehi Lagoon Recreation Plan, including Hawaii Canoe Center, three marinas, ocean sports complex, and 120-acre industrial project, Honolulu.
- Honokohau Industrial Park, North Kona, HI.
- Kahakai Residential Subdivision, North Kona, HI.
- Parker Ranch Shopping Center and North Hawaii Hospital traffic impact studies, Kamuela, South Kohala, HI.
- Ford Island Redevelopment Traffic Impact, Pearl Harbor Complex, Honolulu.
- Marine Corps Base Hawaii Family Housing Project, Kaneohe, HI (1,700 units).
- Kawaihae Hawaiian Homelands Master Plan, 10,000 acres with commercial center, light industrial areas, and medium to low-density residential areas.

Area C/D Long-Range Transportation Master Plan; Phoenix, AZ. Project Manager who directed development of highway and street master plan for the 110-square mile future development area along northern perimeter of Phoenix.

West Valley Transit Study; AZ. Project Manager who directed evaluation of market potential and development of 10-year plan for public transit services in nine communities in suburban Phoenix.

Rillito Corridor Study; Tucson, AZ. Project Manager who directed development and analysis of highway and public transit alternatives in the 12-mile long corridor north of Tucson. Analyses included regional highway forecasts, facility costing and relocations, and development of roadway plans and profile drawings.

Chek Lap Kok Airport Site Study; Hong Kong. Project Manager responsible for analyses of access and circulation for proposed new airport site, including use of high-speed water ferry, light rail transit, bus and new regional roadways.

California Transportation Commission Corridor Study; CA. Project Manager, Transportation needs, issues, and potential projects were identified and evaluated for seven state highway study corridors in Southern California: Los Angeles Route 47, Imperial/Riverside Route 86, San Bernardino Routes 58 and 71, San Diego Route 52, Santa Barbara Route 101, and Ventura Route 126.

Los Angeles I-5 and I-110 Freeway Corridors Transit Alternatives Analysis/DEIS. Project Manager who conducted reasonableness and sensitivity checks of transit operational assumptions, and evaluations of rail and busway transit alternatives.

Ventura County Corridor Study. Project Manager who directed the planning and evaluation of alternative levels of express bus transit services on Routes 101 and 126 in Ventura and western Los Angeles Counties, including both public and private operators.

Downtown Distribution Plan for the San Bernardino Freeway Express Busway. Project Director, responsible for the development and analysis of bus routes and priority treatments within the Los Angeles Central Business District.

Parking Studies

- Los Angeles Central Business District, CA
- Ventura CBD, CA
- San Clemente, CA

- Westwood Village, CA
- Laguna Beach, CA
- Los Angeles Trade Technical College, CA
- San Fernando Community College, Los Angeles, CA

Transportation Terminal Plans

- Oxnard, CA Amtrak, commuter rail, intercity bus, and local bus terminal
- Redondo Beach, CA regional bus terminal
- Riverside, CA; regional bus terminal

Transit Studies

Short-Range Transit Plan, prepared for the 19 Southern California municipal transit operators, ranging from community-level dial-a-ride operators to a 140-bus fixed-route operator.

Community Emergency Response Plans

Evacuation Plan for San Onofre Nuclear Generating Station Emergency Planning Zoning (EPZ), Orange and San Diego Counties, CA

Evacuation Time Estimate Study for San Onofre EPZ, San Luis Obispo, CA

Emergency Response Plan Preparation for City of San Clemente, CA

Site Access And Circulation Studies

- Trizec Office Building, Inglewood, CA
- Rancho California Residential and Industrial Projects, Temecula, CA
- University of California at Santa Barbara, CA
- Santa Monica Hospital Medical Center, CA
- St. Mary's Medical Center, Long Beach, CA
- Lindbergh Field Airport, San Diego, CA
- Meadows Field Airport, Bakersfield, CA

Urban Area Circulation And Transportation Management Studies

- Downtown Circulation Study, Glendale, CA
- Circulation Element, Santa Maria, CA
- Outer State Street Area, Santa Barbara, CA
- Community Circulation Plan, Barstow, CA
- Downtown Transportation Management Plan, Riverside, CA
- Central City Transportation Management Plan, Sacramento, CA

1969 to 1972

Project Engineer, Mississippi Gulf Coast Area Long-Range Transportation Study.

Responsible for the development of regional travel forecasts, testing of alternative

transportation networks, and development of an implementation program for the Gulfport-Biloxi-Pascagoula area.

Project Director, Knoxville, Tennessee

TOPICS Study. Responsible for the development of a short-range program of roadway operational and safety improvements.

1967 to 1969

U.S. Army - 1st Lieutenant

U.S. Army Engineer District, Louisville, Kentucky, Construction Project Officer, Wright-Patterson Area Office.

Publications

A Regional Plan of Preferential Facilities for High-Occupancy Vehicles, (co-author) presented at 54th Annual Meeting of the Transportation Research Board.

PROFESSIONAL MEMBERSHIPS

Institute of Transportation Engineers

Hawaii Section Vice President, 2000

Hawaii Section Secretary, 1999-2000

Hawaii Section Treasurer, 1998-1999

Chi-Epsilon, National Civil Engineering

Phi Kappa Phi Honor Society