

JOINT BASE LEWIS-MCCHORD

2011 Qualitative Site Assessment

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I. ABOUT THIS REPORT

This initial Commute Trip Reduction (CTR) assessment was prepared under a Congestion Management and Air Quality (CMAQ) grant administered jointly by Pierce Transit, Pierce County, and the City of Tacoma. The grant supports Pierce County employers who successfully applied for assistance in meeting their requirements under the 1991 Commute Trip Reduction law (amended in 2006). This report represents an initial needs assessment to guide the design of a commuter incentive program for Joint Base Lewis-McChord (JBLM).

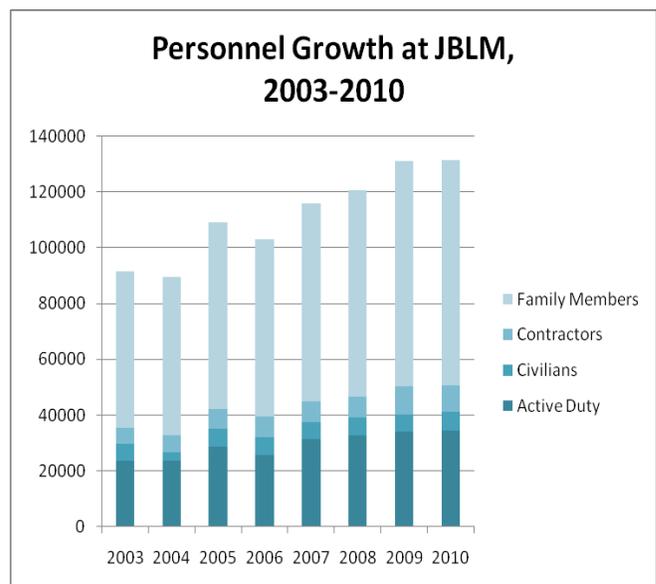
II. DESCRIPTIVE SITE ANALYSIS

SIZE, LOCATION, AND SETTING //

Joint Base Lewis-McChord is the largest military installation on the West Coast and the 3rd largest employer in Washington. JBLM directly employs 50,000 personnel and supports an additional 80,000 family members. Taken as a single entity, JBLM would be the 5th largest city in Washington State. It lies on the western edge of Pierce County, 45 miles southwest of Seattle, 10 miles southwest of Tacoma, and 15 miles northeast of Olympia. At more than 87,000 acres, JBLM covers an area equivalent to the city of Seattle. Constrained by environmental barriers on three sides (Puget Sound, the Nisqually River Delta, and the forested training lands) and traversed by a single interstate corridor (Interstate 5), JBLM is particularly susceptible to growth-related traffic congestion. Though JBLM provides a significant economic benefit to the South Sound region, such congestion introduces uncertainty and inefficiency into personnel scheduling, increases air pollution, decreases quality of life, decreases freight capacity along I-5, and potentially diminishes mission readiness.

PERSONNEL GROWTH //

Since 2003 JBLM has grown by 40% across all personnel classifications (active duty, civilian employees, contractors, and dependents). In addition to the sudden return of 17,000 soldiers from Iraq and Afghanistan in 2010, decisions made by the Base Realignment and Closure Commission (BRAC) consolidated personnel from other bases onto JBLM. Such concentrated growth has put severe strain on local infrastructure and brought greater visibility to JBLM transportation issues. Growth is expected to continue at a more modest pace through 2016. Combining this expected growth with regional population projections for 2030 provides a solid policy framework in which to plan infrastructure improvements.



JBLM TRAVEL PATTERNS //

In the last Commute Trip Reduction survey period (2009), JBLM reported a drive-alone commuting rate of 87%. Due to geographic constraints and a lack of alternative corridors, 80% of JBLM traffic funnels onto Interstate 5. Elsewhere in the Puget Sound region, freeways enjoy structural improvements to manage demand, including high-occupancy vehicle (HOV) lanes on I-5 in King County, express lanes on I-5 and I-90 in Seattle, and high-occupancy toll (HOT) lanes on SR 167 in SE King County. By contrast, I-5 through JBLM is a relatively unimproved interstate corridor unable to accommodate additional demand. With only general-purpose lanes available, single-occupant vehicles continue to enjoy equal privilege with carpools/vanpools/transit, directly incentivizing driving alone despite high levels of congestion. The fastest growth in new housing stock is occurring in eastern Thurston County, forcing a large proportion of new residents to travel the narrowest portion of the I-5 corridor. Fully 25-30% of travel demand to JBLM emanates from I-5 through the Nisqually River Delta. Congestion from the north and east is similarly severe, exacerbated by a multiyear project to rebuild the I-5/SR16 interchange. Compared to Thurston County, the availability of alternative corridors in Pierce County mitigates congestion somewhat (including DuPont-Steilacoom Road, SR 512, SR 16, and SR7).

Military commutes differ substantially from traditional patterns. In addition to gate security requirements that slow all entry to the installation, active-duty soldiers make as many as six commute trips per day. They commute to physical training (PT), return home, return for duty, drive off-base for lunch, return to duty, and finally return home. Morning, mid-day, and afternoon peak hours are thus longer and more bi-directional than would otherwise be expected. Managing this distributed demand is very difficult.

I-5 LANE CAPACITY

Southbound from
Seattle to Olympia



KEY STAKEHOLDERS //

In addition to JBLM and Department of Defense officials, there are numerous governmental entities whose participation is essential for effective commute trip reduction. On the Federal and state level, capital funding and regulatory compliance is negotiated as necessary between the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Railroad Administration (FRA), and the Washington State Department of Transportation (WSDOT). Regionally, intergovernmental planning bodies include the Puget Sound Regional Council (PSRC) and the Thurston Regional Planning Council (TRPC).

Most transit operations are underwritten by local sales taxes disbursed to a local transit authority. Pierce Transit (Pierce County), Intercity Transit (Thurston County), and Sound Transit (urban portions of Snohomish, King, and Pierce Counties) provide transit along the JBLM corridor. Though JBLM personnel contribute to local tax bases, sales tax is not collected on JBLM, and thus JBLM does not directly contribute to transit funding.

A significant portion of the study area lies in unincorporated areas, lending significant influence to county government. At the municipal level, growth at JBLM greatly impacts the cities of Lakewood, DuPont, Tacoma, Steilacoom, Puyallup, Lacey, Olympia, Roy, and Yelm. Lastly, all of these governmental bodies work with various citizens groups, including neighborhood associations, local media, and lobby groups, such as the Transportation Choices Coalition.

III: BARRIERS TO EFFECTIVE COMMUTE TRIP REDUCTION

ADMINISTRATIVE COMPLEXITY // *The existence of numerous regional governmental authorities – each with distinct mandates and jurisdictions – complicates efforts to conduct effective regional planning.*

Despite the military's centralized authority structures, non-combat decision making authority tends to be more dispersed. While "command support" for an initiative results in its quick and effective execution, growing a policy idea *upward* through each authority channel presents significant hurdles to effective communication.

JBLM's location at the western edge of Pierce County makes it difficult to provide effective transit service. Pierce Transit has long found that cost-per-boarding figures for JBLM service are unacceptably high. Since the single largest traffic chokepoint crosses the Pierce-Thurston County line, service planning boundaries inhibit inter-county planning efforts. Accordingly, JBLM lacks the transit services that would be expected for an employer of their size. These administrative boundaries can be overcome through employer partnerships with transit agencies. For example, Boeing partners with King County Metro to provide specialized service from Auburn to its Everett plant, even though Everett lies within Snohomish County.

Efforts to facilitate regional planning include the 1996 creation of Sound Transit, a regional transit agency that plans and coordinates capital transit projects across urbanized portions of Snohomish, King, and Pierce counties. Sound Transit also contracts with local agencies to provide regional express service of the type that traditional planning boundaries would inhibit. The DuPont Park & Ride forms the southern boundary of Sound Transit's taxing authority, effectively including the bulk of JBLM within its service district. Even so, regional express buses from DuPont currently serve only

peak-hour, traditional radial demand into central Seattle. Extending Sound Transit’s boundaries into Olympia/Lacey would facilitate inter-county planning, but not without introducing significant service inefficiencies and potentially diluting the pro-transit votes necessary to secure additional taxing authority.

The recently-published JBLM Growth Coordination Plan – a comprehensive audit of needs arising from rapid and unprecedented personnel growth at JBLM – recommends a \$1-2 billion package of transportation improvements, most of which are capital improvements (to I-5 and SR 704) aimed at relieving congestion by increasing road capacity. Even so, the report includes a critical list of transportation demand management (TDM) strategies, including HOV lanes, security gate priority to HOVs, and Department of Defense funding for bus service. To be successful, these suggestions must be taken up and funded by appropriate regional governmental agencies.

GEOGRAPHIC CONSTRAINTS // Significant geographic constraints prohibit residential growth on land adjacent to JBLM, effectively inducing sprawl and necessitating longer commutes.

WEST: The Nisqually River Delta inhibits development west of JBLM. The Nisqually is subject to flooding and volcanic hazard, it enjoys federal protection as a National Wildlife Refuge, and its southern areas are home to the Nisqually Tribe. Interstate 5 was built through the delta in the 1960s, facilitating rapid residential growth in eastern Thurston County. As a result, JBLM commuters from Thurston County must funnel onto a narrowed (and relatively un-expandable) corridor with few alternative routes available.

NORTHWEST: The close proximity of Puget Sound and existing low-intensity land uses (such as Home Golf Course) inhibit development in areas immediately **northwest** of JBLM. Nonetheless, the city of DuPont has experienced rapid growth (1,136% since 1990) and will eventually accommodate a population of 12,000. It presents perhaps the best opportunity for moderate-density development adjacent to JBLM.

SOUTH: The southern two-thirds of JBLM consist of vast training lands (both open prairie and woodland). Critical for combat training purposes, these lands are unlikely to be repurposed for residential development. Those living south of JBLM (in low-cost areas such as Roy, Yelm, McKenna, and Rainier) must commute through the training lands, 10-25 miles each way.

EAST: Vast areas east of JBLM consist of low-density, low-cost, relatively plentiful housing. Living in these semi-rural unincorporated areas (such as Graham and Frederickson) requires long driving distances to access retail centers, public services, and employment sites. Rezoning offers long-term potential for densification, but currently these areas are too far removed from urban amenities for this to be economically feasible.

NORTH: Lakewood and Tacoma are mature cities that exhibit significant long-term growth potential. Despite moderately higher living costs than the lower-density areas already discussed, their urban amenities and closer proximity to JBLM will continue to make them attractive places for personnel to live. Repurposing industrial land, implementing targeted densification through zoning reform, and building transit-oriented developments may permit further residential growth to be accommodated.

TRANSIT INFRASTRUCTURE //

LOCAL BUS: Pierce Transit operates half-hourly service from Lakewood to Madigan Hospital (Route 206) and from Tacoma Mall to McChord Field (Route 300). While these routes are relatively well-utilized along non-JBLM segments, very few riders continue onto JBLM. There is also limited peak-only service from Madigan Hospital to Ft. Lewis Depot (Route 207). Primarily targeted toward low-income persons, disabled persons, and those without access to a vehicle, these routes were not designed to reduce regional traffic demand. Pierce Transit and JBLM have repeatedly collaborated in attempts to increase ridership, but services remain uncompetitive due to service frequency, a lack of regional connections, and the absence of any lane or gate priority. In addition, the unique geography of the Tillicum and Woodbrook neighborhoods requires circuitous route designs that further diminish their potential to positively impact JBLM. Given the long average vehicle-miles traveled (VMT) by JBLM personnel (14.7 miles each way), it is clear that local-stop services wholly within South Pierce County stand little chance to compete for mode share. Lengthy commutes require express service, traditionally the most expensive to operate.

EXPRESS BUS: Currently no express buses serve JBLM. Though Intercity Transit and Pierce Transit operate regional express service between Tacoma, Lakewood, Lacey, and Olympia (Routes 603/603A), these routes bypass JBLM, making no stops between Lakewood and Lacey. In addition, Sound Transit provides peak-hour express service (Route 592) from DuPont to Seattle with stops in Lakewood. Four "reverse" peak-hour trips provide service to/from Lakewood and DuPont, but these reverse trips have very low ridership and there is no connection between DuPont Park & Ride and the DuPont Gate (1.5 miles).

Despite a difficult funding environment due to the ongoing recession, the implementation of new express bus service may be possible through the use of guaranteed Mass Transportation Benefit Program funds (see Section IV). Significant challenges to route design present the greatest difficulty to potential express service. Employment sites are dispersed widely across JBLM, and it would be difficult to serve enough sites to have sufficient ridership without making even express service time-uncompetitive. Express services are likely to succeed at only the densest employment centers, especially Madigan Army Medical Center with approximately 4,500 employees, while ignoring smaller worksites.

COMMUTER RAIL: Sounder commuter rail service to Lakewood is scheduled to begin in 2012. Given adequate bus connection opportunities at Lakewood Sounder Station, Sounder could become an attractive option for McChord and Madigan personnel who work traditional schedules. Though most train service will be oriented toward the greater peak demand in Seattle, three reverse-commute Sounder trips will be offered daily, with flexibility to add trips as demand dictates. Longer term, the Point Defiance Bypass project provides an opportunity to extend Sounder service to DuPont. A successful extension would require high-quality timed bus connections (from DuPont to Lewis Main/North Fort and Lakewood to McChord), a long-term vision for Sounder as a bi-directional commuter rail system, and schedule integration with Amtrak Cascades. In addition, combining the insights of the JBLM Growth Coordination Plan with the Point Defiance Bypass may provide an opportunity for political compromise. Rebuilding I-5 interchanges in accordance with the recommendations of the JBLM Growth Coordination plan may allow for designs that incorporate grade separation of the rail line. This would satisfy the safety concerns of Lakewood and DuPont while allowing high-speed rail to serve the rail line.

JBLM TRANSIT MAP



Current one-seat rides onto JBLM.

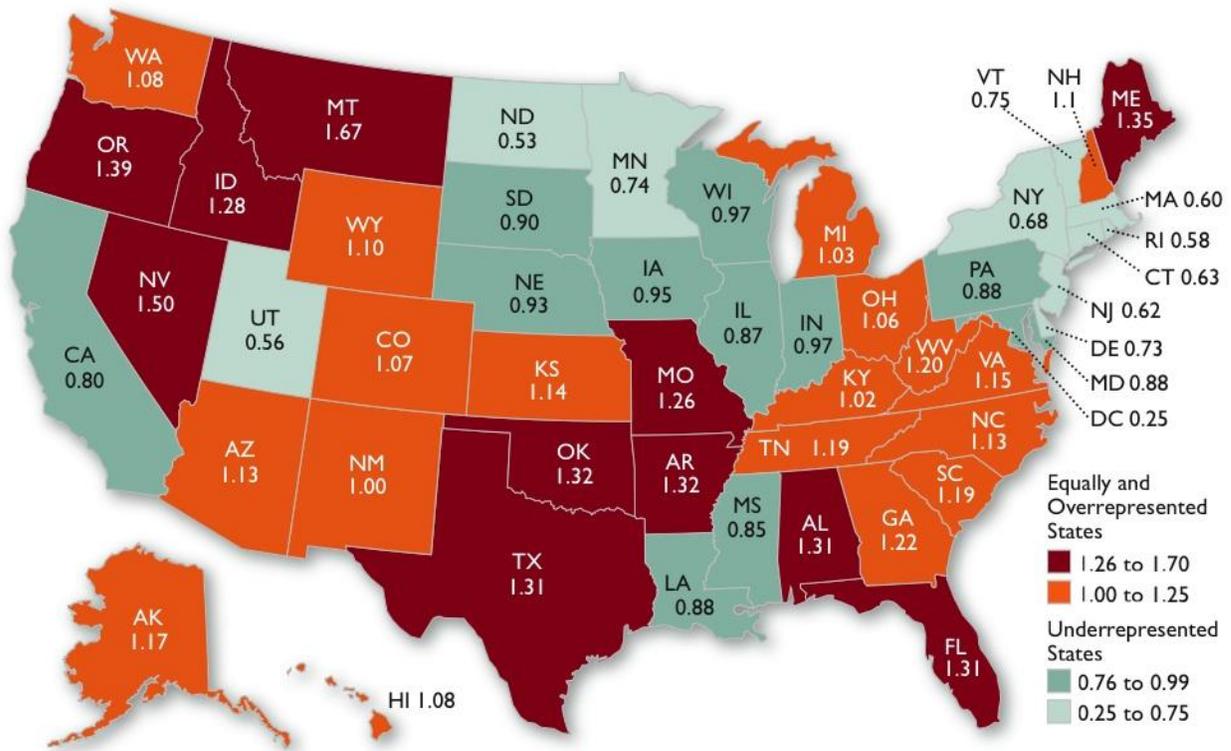
MODAL AND CULTURAL INERTIA //

Most military personnel move frequently between duty stations and deployments. Personal vehicles offer the flexibility required to lead a mobile and unpredictable life. Even comprehensive and reliable transit service may remain uncompetitive if newly arrived soldiers have made significant investments in personal vehicles, making the marginal cost of each commute trip relatively low.

In addition, the demographics of the U.S. military (see map below) clearly indicate that personnel are likely to come from areas in which there is little experience with public transportation. Areas with the best transit patronage (New York, Washington DC, Chicago, San Francisco etc...) exhibit the lowest enlistment levels, while rural New England, the South, and the interior West have the highest rates. Soldiers are very likely to arrive at JBLM with a cultural expectation for drive-alone commuting.

Enlisted Representation Ratios for 2007

Below is a comparison of each state's 2007 proportion of the total U.S. military enlistments to its comparable population. Ratios greater than 1.0 indicate overrepresentation, and ratios less than 1.0 indicate underrepresentation.



Enlisted Representation Ratios (from the Heritage Foundation)

IV: POTENTIAL NEAR-TERM SOLUTIONS

MAXIMIZE VANPOOL USAGE //

Vanpools provide a small but crucial solution. Though it would be difficult to scale vanpool availability sufficiently to meet all potential transit demand – the roughly 20 vans currently available in Thurston County could transport a maximum of 300 personnel, less than 1% of the total – it is sensible to maximize the impact of available vans. The Mass Transportation Benefit Program (MTBP) guarantees a free commute for vanpoolers, a subsidy that makes vanpools the most competitive solution for those with exceptionally long commutes. Expanding the impact of vanpooling will require additional vans and marketing coordination between Pierce Transit, Intercity Transit, King County Metro, Kitsap Transit, Mason Transit, Grays Harbor Transit, and Rideshareonline.com.

MANDATE CARPOOLING WITHIN ACTIVE-DUTY UNITS//

If severe traffic congestion affects soldiers' ability to arrive at their duty stations on time, commanders could mandate that unit soldiers share rides to reduce traffic. Although carpools are generally informal and difficult to track, they offer the simplest, cheapest, and most scalable traffic solution. Given the structures of military authority, a mandated carpool program could be enormously successful at reducing traffic.

MANDATE USAGE OF THE MASS TRANSPORTATION BENEFIT PROGRAM //

Current federal law provides up to \$230 per month as a commuter subsidy for any Department of Defense employee who rides an approved form of transit (public bus, rail, vanpool, or foot ferry). These funds are guaranteed and require only simple paperwork. Changing from an opt-in system to an opt-out system, or even mandating that all personnel obtain appropriate fare media through MTBP, would provide local agencies with a windfall of operating funds and directly incentivize them to provide new service to JBLM. Though current Department of Defense policy prohibits using such funds to operate an internal shuttle system, MTBP funds may be given to a contracting transit agency to provide "domicile-to-duty" commuter service.

There is military precedent for such an arrangement. The Presidio of Monterey (CA) currently uses MTBP funds to contract with Monterey-Salinas Transit for 12 express bus routes. On an installation with roughly 5,000 personnel (125 active-duty, 3,300 military language students, and 1,600 civilians), ridership is roughly 1,000 per day, an impressive 10-20% transit share.

Currently at JBLM, only two personnel process MTBP applications and distribute vouchers and other fare media – and even then it is peripheral to their primary job description. The Commute Trip Reduction law requires the naming of an Employee Transportation Coordinator (ETC) at each "affected" worksite. Given the large size of each directorate and battalion at JBLM, it is sensible to name an individual ETC within each group to serve as the point of contact (POC) for transportation resources and benefits processing. JBLM is currently seeking these ETCs, and these positions should be in place by March 2011.

PROVIDE SECURITY GATE PRIORITY TO HOV/TRANSIT //

Without any priority for high-occupancy vehicles at gates or on I-5, driving alone will continue to be the most convenient choice. While the engineering and installation of HOV lanes will take significant amounts of time and capital funding, security gate priority for HOVs may be implemented quickly and cheaply. Improving flow and throughput at security gates directly incentivizes ridesharing behaviors, helps make transit service time-competitive, and reduces overall queue times.