

**Metro**Los Angeles County
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Los Angeles, CA 90012-2952213.922.2000 Tel
metro.net

REVISED
SYSTEM SAFETY, SECURITY AND OPERATIONS COMMITTEE
FEBRUARY 19, 2015

SUBJECT: FARE GATE PROJECT**ACTION: RECEIVE AND FILE****RECOMMENDATION**

Staff does not recommend implementing fare gates at Orange Line stations. Staff believes the fare gate equipment would not provide additional revenue over the 15 useful life years to recover the costs of implementing fare gates on the Orange Line.

ISSUE

In response to the Motion by Directors Yaroslavsky and Krekorian to Item 6, "Orange Line Fare Enforcement" dated January 15, 2014 (Attachment A), Metro staff would like to report back on the analysis that was conducted on options to gate the following Orange Line stations: North Hollywood, Van Nuys, Reseda, Sepulveda, Pierce College, and Canoga.

DISCUSSION

The Orange Line consists of 18 stations and operates 48 articulated buses on a dedicated bus-way from North Hollywood to Warner Center and Chatsworth stations. Average weekday boardings are an estimated 25,369.

A vendor was contracted to perform a detailed engineering analysis (Equipment Quantities Analysis and Queuing Analysis). The analysis was needed to determine the required amount of fare gate equipment for each station. Metro staff also analyzed parcel maps, station activity, ridership, TAPs, TAP Vending Machine (TVM) sales along with loss of revenue to determine the feasibility of implementing fare gates at specific stations along the Orange Line. Based on the evaluation criteria, staff decided that North Hollywood, Van Nuys, Reseda, Sepulveda, Pierce College, and Canoga stations offered the greatest potential. Based on the vendor's study, North Hollywood, Van Nuys, and Reseda stations required more fare gate equipment than originally planned.

Orange Line stations are very open and accessible, which would decrease the effectiveness of fare gates. To mitigate this weakness, a fencing strategy was included

in the conceptual design; however, fencing alone cannot prevent unauthorized entry to paid areas. Staff also believes the additional fencing would diminish station appeal and compromise the architectural consistency of stations.

Additionally, fare gates are costly and should not be viewed as a complete solution for loss of revenue on the Orange Line. A payback period with a sufficient level of confidence could not be provided because the entire Orange Line would not be gated. The inputs for calculating the payback period method include estimating the following: loss of revenues, number of boardings, and average fare per boarding. These inputs are used to compute projected annual revenue increases. The absence of fare gates across the entire line creates opportunities for individuals to avoid stations with fare gates and board at stations without fare gates. Therefore, the inputs become too imprecise.

Even so, the estimated life expectancy for fare gate equipment is 15 years. Staff does not believe the fare gate equipment would provide additional revenue over the 15 useful life years to recover the costs of implementing fare gates on the Orange Line.

Metro has prepared a rough order of magnitude (ROM) estimate of \$13.1 million to implement fare gates at these six stations. Please see attachment B.

The cost for Civil/Infrastructure along with Electrical/Systems and Communication work is \$8.1 million. The scope of work includes relocating existing TVMs to accommodate fare gates with additional emergency swing gates and fencing along entire non-paid area at stations. The ROM includes Metro's design criteria infrastructure required to support fare gate equipment with new canopy shelter at fare gate and TVM locations. Additional provisions to canopy structure shall include new lighting and overhead installation of closed-circuit television cameras. One emergency telephone and two separate gate telephones shall be located at every new fare gate entry to ensure customer safety. Please see attachment C.

The ROM estimate for fare gate equipment and installation is \$5 million which includes an estimate \$1.7 million to procure fare gate equipment, \$3.3 million for reconfiguration and installation of fare gate equipment. Please see attachment B.

The ROM estimate for the Systems Support Services Contract OP02461010-Maint is \$950 thousand, which would begin during FY16 and carry through FY19.

After careful consideration, staff does not recommend implementing fare gates at Orange Line stations because the options analyzed do not make the business case for implementation of this gating initiative. However, staff will continue to assess opportunities to improve efficiencies and decrease revenue loss on the Metro system.

DETERMINATION OF SAFETY IMPACT

The Orange Line stations are not required to meet The National Fire Protection Association 130 requirements because NFPA 130 applies to rail systems not bus

systems. Staff reviewed the conceptual designs including the amount of fare gate equipment required to ensure safe egress capacity for the six Orange Line stations. Based on the expected occupancy of these stations, two means of egress should be provided at each boarding area. The means of egress should lead to a public way or other area that affords protection for customers. The means of egress shall not require any special knowledge or tools for people to use. Signage and lighting should be provided.

The construction phase of fare gate implementation at side and split platform stations with only one paid entrance would likely cause operational challenges and introduce new obstacles for customers. For example, during construction it would be difficult to provide customers with convenient access to fare equipment and station entrances while maintaining existing service levels. Staff would need to investigate whether or not the construction period could be modified to minimize the impact on operations.

FINANCIAL IMPACT

~~An LOP increase would be added to 210090—Fare Gate Project, under cost center 3020—TAP Operations. Since this is a multiyear project, the cost center manager, project manager, and Executive Director would ensure that costs are budgeted in fiscal year budgets.~~

~~The Systems Support Services Contract OP02461010-Maint with Cubic Transportation Systems, Inc. would be an operating cost funded by Revenue Collections cost center 5440. Since this is a multi-year effort, the Revenue Collections cost center manager, project manager, and Executive Directors would ensure the costs are budgeted in fiscal year budgets.~~

Impact to Budget

~~The funding source for an LOP increase would be State Repayment of Capital Project Loan, which is eligible for capital improvements not operating costs on either bus or rail.~~

ALTERNATIVES CONSIDERED

Staff performed a preliminary analysis on the Orange Line and determined it was not feasible to implement fare gates on the entire line. Staff analyzed parcel maps, station activity, ridership, TAPs, TVM sales along with loss of revenue to determine the feasibility of implementing fare gates at more demanding stations. Staff worked with a vendor and performed a detailed analysis on six stations. Despite the increased activity and boarding's, staff concluded the concept was not feasible.

During September 2014, staff provided a comprehensive analysis of alternatives for the Orange Line.

NEXT STEPS

1. Staff will continue to monitor and control education, media, and enforcement efforts to minimize loss of revenues on the Orange Line.

ATTACHMENTS

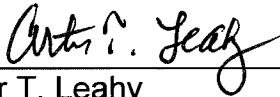
- A. Motion by Directors Yaroslavsky and Krekorian to Item 6, "Orange Line Fare Enforcement" dated January 15, 2014
- B. Funding/Expenditure Plan
- C. Schematic Drawings for Six Stations

Prepared by: David Sutton, DEO TAP
Patrick Preusser, DEO Rail Operations

Questions: Christopher Reyes, Senior Administrative Analyst, Operations
(213) 922-4808



Robert Holland
Interim Chief Operations Officer



Arthur T. Leahy
Chief Executive Officer

FINANCE AND BUDGET COMMITTEE

January 15, 2014

MOTION BY DIRECTORS YAROSLAVSKY AND KREKORIAN

ORANGE LINE FARE ENFORCEMENT

ITEM 6

In response to the Board's directive in November, LASD conducted two 100% 11-hour fare check operations on the Orange Line for all deboardings on Tuesday, December 3, 2013 and Tuesday, December 17, 2013. Each operation focused on three stations with North Hollywood being in both operations.

The fare evasion rate for December 3rd was 22% and on December 17th it was 16%. Moreover, it was found that there are a significant number of misusers – those who have an activated TAP card and do not tap.

The issue of fare evasion is not new to this agency. When the gates along the Red and Purple line were first locked, it was found that there had been a significant number of fare evaders and misusers prior to the gates being locked. Unless we take this issue head on, and begin to design all our stations with gates, including those at grade, fare evasion will continue to skyrocket and become a perpetual problem with no end in sight. We can no longer afford to have "business as usual" approaches to solving the fare evasion problem system-wide.

WE, THEREFORE, MOVE that staff develop options to gate or partially gate all Orange Line stations and/or other actions as appropriate, that an educational/media campaign regarding TAP be explored, and that signage be placed on or adjacent to the SAVs informing patrons of the need to TAP and the associated fine. Staff should report back to this committee at the March meeting with a plan of action and status.

WE FURTHER MOVE that staff report back to the board at the March meeting on the status of gating the Exposition Line, Foothill Extension and Crenshaw Line which are currently under construction/design.

FUNDING/EXPENDITURE PLAN

210090 Fare Gate Project - Orange Line

	FY15	FY16	FY17	Total	% of Total
Uses of Funds					
Infrastructure		\$677,694		\$677,694	5.19%
Fare Gate Equipment	\$959,462	\$2,238,743		\$3,198,205	24.50%
Other Equipment, Materials, Signage		\$4,100,000		\$4,100,000	31.41%
Equipment Installation		\$2,840,850		\$2,840,850	21.77%
Agency Costs	\$80,000	\$655,070	\$84,366	\$819,436	6.27%
Contingency		\$1,413,040		\$1,413,040	10.82%
Total Project Cost	\$1,039,462	\$11,925,397	\$84,366	\$13,049,225	100%
Sources of Funds					
State Repayment of Capital Project Loan	\$1,039,462	\$11,925,397	\$84,366	\$13,049,225	100%
Total Project Funding	\$1,039,462	\$11,925,397	\$84,366	\$13,049,225	100%



Metro

ATTACHMENT C

METRO ESTIMATING TRANSMITTAL

Date: January 15, 2015 Estimating Reference No: 10388 Rev.1

To: Patrick Preusser Ph. No. 213-922-7974 From: Agnes Reyes

Project No: 210090 Task No: '07.01

Contract No: TBD Title: MOL Fare Gates Project

Contract Action Type and Number (e.g., CN 1, CO 1, CWO 1): N/A

Contract Action Title: N/A

Budget Estimate (Not for bids or negotiations)

Description of Contents:

1. Basis of Updated Budget Estimate.
2. Updated Rough Order Magnitude (ROM) estimate report.

If you have any questions or require additional information, please feel free to contact Agnes Reyes at extension 23975.

Paul Briggs
Paul Briggs – Director, Cost Estimating

Date: 1/15/15

Copies: Estimating files,

Date: 1/15/15

Estimating No.: 10388

Rev.1

BASIS OF BUDGET ESTIMATE
Metro Orange Line Passenger Fare Gate for Six Stations (Rev.1)

Executive Summary:

As requested, Metro Estimating has completed the revised Budget Estimate for options to gate the following Orange Line stations: North Hollywood, Van Nuys, Reseda, Sepulveda, Pierce College, and Canoga.

The work requires modification of existing fencing and new fencing; existing station platforms have 3.5 foot high guardrails along the back side, which can easily be overcome by fare evaders. The fencing must be replaced with 5 foot high fencing that is traditionally used at rail stations with fare gates. New fencing of the same type must be installed along the curb edge of platform entrances and also along the centerline of the busway of stations where adjacent platforms face one another. Emergency swing gates (ESG) are placed in strategic locations in the station platform. Signage is also incorporated to provide direction. Canopy coverage is also provided for the TVM's and for protection of fare gate equipment. It also includes electrical and communication support requirements for the fare gate equipment.

MOL Fare Gating :	MOL Fare Gating for six (6) Stations	\$4,572,372.00
	Design & Construction Unallocated Cont. (30%)	1,371,712.00
Total Construction Cost:		\$5,944,084.00
D/B Contractor:	D/B Final Design Services (7%)	416,086.00
	D/B Design Support During Construction (2%)	118,882.00
	D/B Construction Management Costs (4%)	237,763.00
Total Construction Cost With Markups:		\$6,716,814.00
Agency Costs:	Preliminary Design Cost by Metro (3%)	201,504.00
	Design Cost- Signage by Metro	20,000.00
	Third Party Costs by Metro	50,000.00
	Agency Cost by Metro (5%)	335,841.00
	Property Acquisition/Easements	0.00
		\$7,324,160.00
	Metro Unallocated Contingency (10%)	732,416.00
Total Project Cost (4th Qtr 2014)		\$8,056,576.00

Basis – General/Civil and Infrastructure:

This budget estimate (ROM) is based on the following:

- a. The estimate request package received on November 21, 2014 and January 3, 2015; E-mails received and discussions with Jonathan Langteau, Patrick Preusser and Project Team.
- b. The fare gate equipment and installation cost is by others.
- c. This estimate does not include any ROW costs.
- d. The signage cost is a placeholder for design and fabrication/installation of the wayfinding signs from Maya Emsden.
- e. This estimate does not include any cost for revenue staffing requirements.
- f. This estimate includes an allowance for traffic control for North Hollywood and Van Nuys stations.
- g. The revised preliminary Scheme 'A' for Reseda and Van Nuys stations include dedicated crosswalk and ADA ramp.
- h. For Canoga Station, the Archstone new entrance scheme dated December 24, 2013 and connecting walkway to Eton Avenue were included and used for this budget estimate.
- i. Cost for temporary station entrances and temporary access location are placeholder costs until more information and drawings are available.
- j. This estimate assumed Metro's facilities are open 24/7 and must remain in operation during construction.
- k. A placeholder of 20 percent premium for labor shift work is included in this estimate until shift work hours is specified.
- l. Current quoted material prices and RS Means 2014 4th quarter.
- m. Comprehensive local union labor rates including worker's compensation and general liability.
- n. This estimate does not include any escalation. All costs are current as of today.
- o. This ROM estimate also includes markups such as contractor general requirements, overhead and profit.
- p. At a very high level of design, a 30 percent design contingency amount is included to cover and allow for unforeseen and unknown conditions especially since this project is to be done in existing and live stations. It also covers possible design changes as project scope develops.

Electrical & Systems: - See attached Notes and Basis for Electrical and Systems.

If additional assistance is required, please contact Agnes Reyes at extension 23759 or Paul Briggs at extension 21485.

ATTACHMENT C

10388-A Electrical & Systems Revs Summary

First – there have been a couple of scheduled pay increases by IBEW since the initial ROM estimate was done, so this entire ROM estimate has been updated to reflect today's labor rates.

N. HOLLYWOOD STATION:

East Entrance:

1. The faregate array is somewhat longer.
2. I had not considered a canopy in the initial ROM, possibly because none was indicated on the drawings I had, but it appears obvious now that the faregates and TVM's, etc, are not located where the existing canopy is, so I have included some allowance for canopy lighting.
3. An additional power conduit was added (for canopy lighting).

West Entrance:

1. The faregate array is somewhat longer.
2. One more TVM has been added.
3. The new canopy will need to be larger than originally considered, so some allowance was made for additional canopy lighting.
4. Additional power and communications conduits were included for the added TVM.

VAN NUYS STATION:

Westbound Platform Entrance:

1. Mostly configuration changes
 - a. One TVM moved to new location
 - b. Swing gate moved to platform areaThere does not appear to be any added or deleted equipment.

Eastbound Platform:

1. Same as Westbound – mostly just configuration changes – no adds or deletes.

RESEDA STATION:

Westbound Platform:

1. Mostly configuration changes
 - a. Slightly longer faregate array – but still within the original Floor Duct allowance.
 - b. Swing gate moved to platform area.
 - c. Possibly now keeping one TVM that was originally to be removed.There does not appear to be any added or deleted equipment.

Eastbound Platform:

1. Same as Westbound – configuration changes only, possibly keeping 1 TVM.

Project name	MOL Fare Gates REV Sch A
Estimator	AReyes/BDanielson
Labor rate table	U-Lab 07-14 w/W/C&GL
Equipment rate table	BBK 2014B Equip Rate
Report format	Sorted by 'Item/Section/Activity/Phase' Detail summary Print sort level notes
Cost index	California-Los Angeles

Item	Specs	Qty	Description	Takeoff Quantity	Labor Hrs	Labor Cost/Unit	Labor Amount	Material Price	Material Amount	Subs Amount	Equip Price	Equip Amount	Other Amount	Total Cost/Unit	Total Amount	Adj'd Amount	Grand Total	Notes																																								
.01	A	a b c d e f	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H NEW FENCE (MEDIUM & STATION ENTRANCES), 5'H EMERGENCY SWING GATES (ESG) NEW CANOPY OVER TWM & FAREGATES SIGNAGE OTHERS A.CIVIL	156.885 134.146 56.830 13,000 5,000 40,904	361.169 144.966 56.830 13,000 5,000 2,601 565.566	156.885 134.146 56.830 13,000 5,000 2,601 565.566	6,063 4,540 5,200 7,102 13,000 5,000 40,904			19,297 27,617 16,000 31,648 30,800 5,000 130,362			1,269 1,043 1,400 213 43,800 10,000 175,192		26,629 33,200 22,600 38,963 43,800 10,000 175,192	31,912 39,574 27,053 46,714 52,991 22,281 210,526		58,541 72,775 48,653 85,678 96,791 22,281 385,719																																								
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.02	A	a b c d e f g h	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H NEW FENCE (MEDIUM & STATION ENTRANCES), 5'H EMERGENCY SWING GATES (ESG) NEW CANOPY OVER TWM & FAREGATES SIGNAGE OTHERS ADA RAMP DEDICATED CROSSWALK & EXIT PATH OF TRAVEL A.CIVIL	361.169 144.966 56.830 13,000 5,000 2,601 565.566	361.169 144.966 56.830 13,000 5,000 2,601 565.566	13,962 4,689 10,400 7,102 13,000 5,000 2,000 156 56,319			45,356 33,897 32,000 31,648 30,800 5,000 3,700 355 182,757			2,746 1,060 2,800 213 43,800 10,000 5,900 7,139 614 246,198		62,065 39,666 45,200 38,963 43,800 10,000 5,900 7,139 614 246,198	74,386 47,225 54,106 46,714 52,991 12,281 7,139 1,342 265,571	136,450 86,881 99,306 85,678 96,791 22,281 13,039 1,342 541,769																																										
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.03	A	a b c d e f g h	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H NEW FENCE (MEDIUM & STATION ENTRANCES), 5'H EMERGENCY SWING GATES (ESG) NEW CANOPY OVER TWM & FAREGATES SIGNAGE OTHERS ADA RAMP DEDICATED CROSSWALK & EXIT PATH OF TRAVEL A.CIVIL	361.169 144.966 56.830 13,000 5,000 2,601 565.566	361.169 144.966 56.830 13,000 5,000 2,601 565.566	13,962 2,545 10,400 7,102 13,000 5,000 2,000 1,951 55,980			45,356 17,192 32,000 31,648 30,800 5,000 3,700 1,453 167,150			2,746 569 2,800 213 43,800 10,000 5,900 7,139 3,520 229,754		62,085 20,306 45,200 38,963 43,800 10,000 5,900 7,139 3,520 229,754	74,386 24,192 54,106 46,714 52,991 12,281 7,139 4,327 276,136	136,450 44,498 99,306 85,678 96,791 22,281 13,039 7,847 505,890																																										
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.04	A	a b c d e f	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H NEW FENCE (MEDIUM & STATION ENTRANCES), 5'H EMERGENCY SWING GATES (ESG) NEW CANOPY OVER TWM & FAREGATES SIGNAGE OTHERS A.CIVIL	361.169 144.966 30.335 13,000 5,000 536.470	361.169 144.966 30.335 13,000 5,000 536.470	13,962 4,689 10,400 3,612 13,000 5,000 50,674			45,356 33,897 32,000 15,993 30,800 5,000 163,047			2,746 1,060 2,800 106 43,800 10,000 6,712		62,065 39,666 45,200 19,712 43,800 10,000 220,433	74,386 47,225 54,106 23,635 52,991 22,281 264,625	136,450 86,881 99,306 43,347 96,791 22,281 485,057																																										
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Item	Section	Activity	Description	Takeoff	Labor Unit	Material	Material Price	Material Amount	Sub Amount	Equip Price	Equip Amount	Other Amount	Equip Cost/Unit	Total Amount	Admin Amount	Client Total	Notes
	.05		B ELECTRICAL/SYSTEMS .04 SEPULVEDA PIERCE COLLEGE	536,470	50,674	163,047		131,640	131,640	6,712				131,640	147,850	279,490	
A		a	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H	357,769	13,759	41,956				2,709				58,425	70,065	128,490	
		b	NEW FENCE (MEDIAN & STATION ENTRANCES), 5' H	26,781	903	6,766				208				7,878	9,379	17,257	
		c	EMERGENCY SWING GATES (ESG)		7,800	24,000				2,100				33,900	40,578	74,479	
		d	NEW CANOPY OVER TVM & FAREGATES	30,335	3,612	15,993				106				19,712	23,635	43,347	
		e	SIGNAGE		13,000	30,800								43,800	52,991	96,791	
		f	OTHERS		5,000	5,000								10,000	22,281	32,281	
		A	CIVIL	414,884	44,075	124,516			157,355	5,124				173,715	208,932	382,647	
B		*	ELECTRICAL/SYSTEMS					157,355						157,355	176,731	334,086	
	.06		B ELECTRICAL/SYSTEMS .05 PIERCE COLLEGE CANOGA AVE	414,884	44,075	124,516		157,355	157,355	5,124				157,355	176,731	334,086	
A		a	CIVIL REMOVE (E) PLATFORM FENCE & INSTALL NEW FENCE, 5' H	339,815	13,148	42,530				2,598				56,276	69,846	128,122	
		b	NEW FENCE (MEDIAN & STATION ENTRANCES), 5' H	345,926	10,662	81,844				2,635				95,141	113,235	208,376	
		c	EMERGENCY SWING GATES (ESG)		10,400	32,000				2,800				45,200	54,106	99,306	
		d	NEW CANOPY OVER TVM & FAREGATES	60,697	7,226	31,770				216				38,212	47,020	86,232	
		e	SIGNAGE		26,000	61,600								87,600	105,983	193,583	
		f	OTHERS		5,000	5,000								10,000	12,281	22,281	
		i	CANOGA ARCHSTONE NEW ENTRANCE - CONCRETE	67,493	4,258	10,355			35,000	746				50,359	57,782	108,141	
		j	WALKWAY TO (E)		23,816	17,681			7,232	2,682				51,411	62,241	113,652	
		A	CIVIL	813,931	100,510	282,780		42,232	42,232	11,677				437,199	522,484	959,684	
B		B1	ELECTRICAL / SYSTEMS - CANOGA STATION					301,703	301,703					301,703	338,854	640,557	
		B2	ELECTRICAL / SYSTEMS - CANOGA NEW ENTRANCE					258,000	258,000					258,000	289,769	547,769	
		B	ELECTRICAL/SYSTEMS	813,931	100,510	282,780		559,703	559,703	11,677				996,902	1,151,117	2,148,020	

Estimate Totals

Description	Amount	Totals	Hours	Rate	Cost Basis	Percent of Total
Labor	346,443	3,205,354	3,205,354			4.32%
Material	1,050,612					13.04%
Subcontract	1,306,073					16.21%
Equipment	41,205	2,868,296	2,868,296			0.51%
Other	2,746,333	2,746,333				34.09%
Sales Tax	94,555			9.000 %	C	1.17%
ALLOWANCE Prem Labor Sht Wrk	94,555	2,840,888				1.17%
Material Handling Limitations	21,012			20.000 %	C	0.88%
Performance Bond	43,974			2.000 %	C	0.25%
General Requirements	749,890			1.500 %	T	1.13%
Home Office	371,945			25.000 %	T	0.55%
Contractor's MU-Subcontractor	65,304			10.000 %	T	9.23%
Contractor's Fee	416,570			5.000 %	C	4.62%
Design Const Contingency	1,371,711	4,672,372		10.000 %	T	0.81%
D/B Final Design	416,086			30.000 %	T	5.18%
D/B Design Support During Con	116,882					20.37%
D/B Const Management	237,763			7.000 %	T	17.06%
Metro - Prelim Design	201,504			2.000 %	T	17.03%
Metro - Design Cost - Signage	20,000			4.000 %	T	5.19%
Metro - Third Party Cost	50,000			2.000 %	T	1.48%
Metro - Agency Costs	335,941			4.000 %	T	2.95%
Metro - Unallocated Contingency	732,416	7,324,159		3.000 %	T	9.58%
Total		8,056,575		5.000 %	T	7.54%
				10.000 %	T	8.09%