

<b>Committees:</b>	<b>Dates:</b>	<b>Item no.</b>
Streets and Walkways Sub-Committee Projects Sub	27/09/2016 11/10/2016	
<b>Subject:</b> Ludgate Hill crossing (30 Old Bailey)	<b>Gateway 6</b> Progress Report	<b>Public</b>
<b>Report of:</b> Director of the Built Environment		<b>For Decision</b>

### Summary

#### Dashboard

**Project status:** Green

**Timeline:** Trial of the signalised crossing concluded in May 2016

**Project estimated cost:** £275,676

**Spend to date:** £235,094 (as of 17 August 2016)

**Overall project risk:** Low

#### Last Gateway approved

A Gateway 4-5 report was approved in November 2014. This gave authority to implement a signalised crossing in place of the existing zebra crossing on a trial basis, and also to introduce permanent improvements to the footways adjacent to the crossing. The purpose of the trial is to assess the impact of a signalised pedestrian crossing on all users, including vehicle traffic.

#### Progress to date

The permanent works were completed in February 2015, and monitoring of the trial commenced shortly afterwards. The monitoring concluded that, while traffic flows on Ludgate Hill are largely unchanged, there has been a reduction in vehicle queue lengths from the crossing. Bus journey times have generally decreased.

A Stage 3 Road Safety Audit (RSA) was undertaken. Although it did not identify any major issues, it was recommended that the carriageway in the vicinity of the crossing be resurfaced. Several comments were received from stakeholders; While there is lessened priority for pedestrians when compared to the previous zebra crossing configuration, comments from stakeholders gave universal praise for the footway widening, and the majority commented favourably on the improvements to traffic flows.

#### Recommendations

It is recommended that Members:

- 1) Approve the retention of the signalised crossing;
- 2) Authorise the utilisation of the remaining Works and Contingency budget of £34,340 to contribute towards the cost resurfacing of the carriageway in the vicinity of the crossing, as recommended by the Stage 3 Road Safety Audit.

## Main Report

<p><b>1. Reporting period</b></p>	<p>1.1 This report covers the period since the Gateway 4-5 approval in November 2014, which gave authority to implement a trial of a signalised pedestrian crossing in place of the existing zebra crossing. The report also gave approval to introduce permanent changes to the footways adjacent to the crossing, which would deliver improvements to the public realm regardless of the outcome of the trial (see Appendix 1).</p>
<p><b>2. Progress to date</b></p>	<p>2.1 The physical works to install the signalised crossing were completed in February 2015. The signals incorporate a 'countdown' technology which is now standard at new crossing installations. A traffic consultant was commissioned to monitor the performance of the crossing, and the impact on all users including pedestrians, cyclists and motor vehicles. A summary of the findings is given below, with further details and tables contained in Appendix 2. It should be noted that the monitoring took place before the construction of the Cycle Superhighways, and also before the current utilities works in Newgate Street commenced, and so the data is not affected by these two significant workstreams.</p> <p>2.2 The monitoring indicated that the introduction of the signalised crossing did not lead to a significant increase or decrease of traffic flows along Ludgate Hill, but that there has been a reduction in vehicle queue lengths from the crossing. Bus journey times have generally decreased during the survey period, although this change is negligible in the peak periods where westbound buses experience a slight increase and eastbound buses a slight decrease.</p> <p>2.3 The monitoring also indicates that there has been no significant change to footway flows in the area, although there has been an expected change in crossing behaviour. A greater number of people accumulate on the footways as they wait for the green man phase (although this is offset by the widening of the footways), and more pedestrians now cross informally instead of waiting. The informal crossing activity has particularly increased to the west of the formal crossing, between this and City Thameslink station. Although outside the scope of this project, this informal crossing activity may lend support to further changes to the carriageways and footways on the remainder of Ludgate Hill.</p> <p>2.4 The RSA did not identify any major safety concerns with the new arrangement. However, it did highlight the need for the carriageway in the vicinity of the crossing to be resurfaced, to ensure the correct anti-skid protection is in place and to further improve conditions for all road users. An extract from the RSA detailing the issues and recommendation is shown in Appendix</p>

	<p>3.</p> <p>2.5 Several comments have been received in respect of the new crossing, from organisations including Transport for London, Living Streets and St Paul's Cathedral. There was universal praise for the widened footways, and most noted the perceived improvement in traffic flows. However, some also noted the disadvantages to pedestrians, who no longer have priority to cross as they did with the zebra crossing.</p>
<b>3. Next steps</b>	<p>3.1 Taking the monitoring data and feedback into consideration, officers recommend that the signalised crossing is retained on a permanent basis. It is considered that the improvements to traffic flow, and the enhanced public realm in terms of the widened footway on the south side, offset the disbenefit of pedestrians having to wait.</p> <p>3.2 It is also recommended that the current underspend on the Works and Contingency sub-tasks (£34,340) should be utilised to contribute to the resurfacing the carriageway in the vicinity of the crossing using the appropriate anti-skid surfacing (the total cost of which is approximately £40,000, with the balance met from the highways maintenance budget). This will ensure that the standard of the quality of the carriageway matches that of the surrounding footways, and that pedestrian and vehicle safety is further improved.</p> <p>3.3 Should Members concur with these recommendations, the outstanding work will be completed and a Gateway 7 report will be produced in due course.</p>

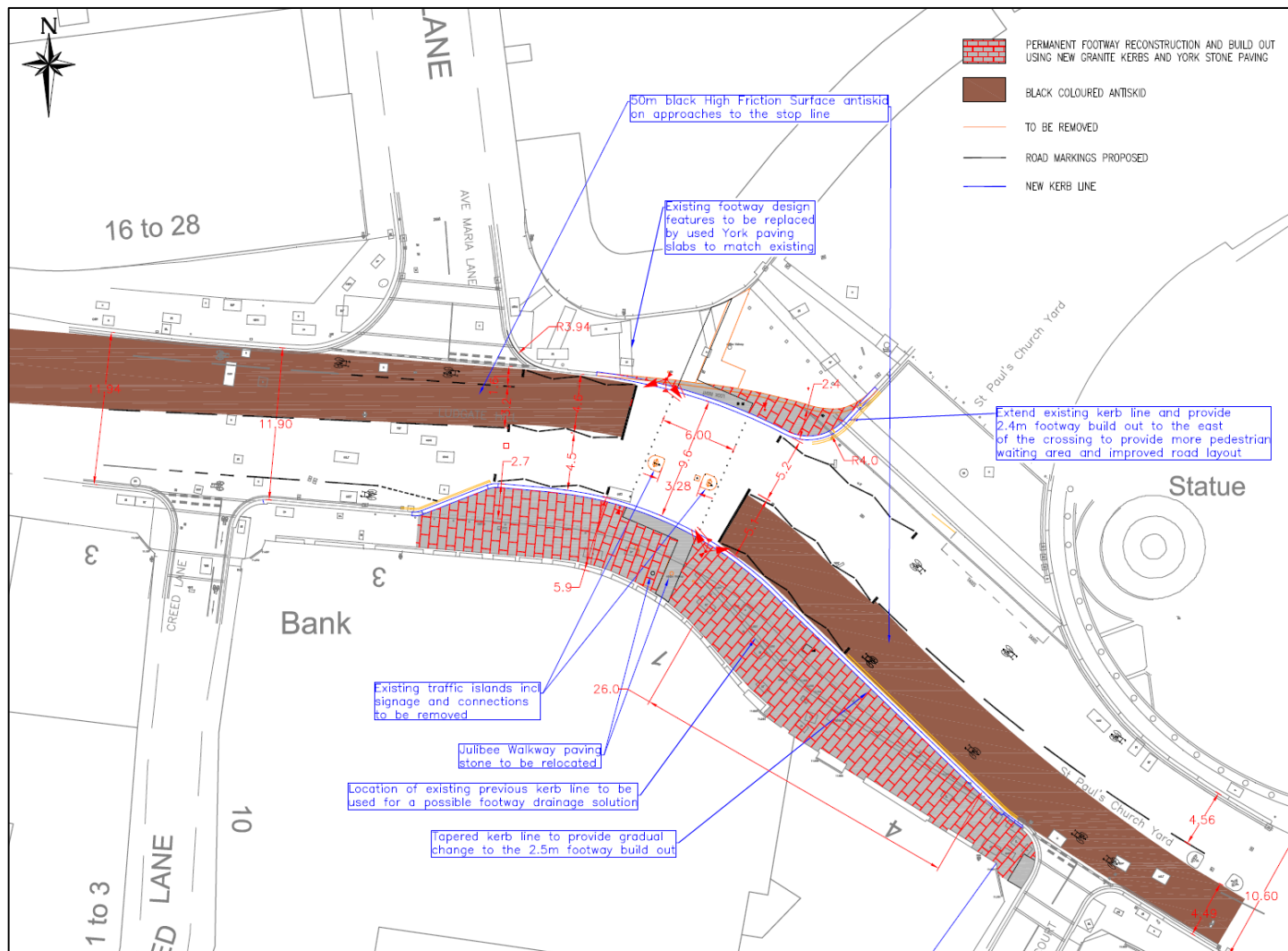
### Appendices

<b>Appendix 1</b>	Plan and photos of the new crossing
<b>Appendix 2</b>	Summary of monitoring results
<b>Appendix 3</b>	Extract from Road Safety Audit (Stage 3)
<b>Appendix 4</b>	Finance tables

### Contact

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# Appendix 1 – plan and photos of the new crossing





## Appendix 2 – summary of monitoring results

The monitoring process involved the commissioning of four sets of surveys, two prior to construction and two post-construction. The survey dates were:

- Thursday 3 July 2014
- Wednesday 15 October 2014
- Monday 23 and Thursday 26 March 2015
- Monday 11 to Thursday 14 May 2015

Where surveys were undertaken across more than one day in the week the daily variance across the week was reviewed to ensure that the results were consistent.

### Traffic flows

Table 1 shows that overall there is only a limited change between the pre and post implementation traffic flows. There was a drop in flows (200 vehicles) in March 2015 which is often observed shortly after the completion (February) of schemes as traffic diverts away from the area to avoid the disruption caused by the works and takes some time following the completion of the scheme to realise the disruption is over and divert back.

Table 1. Summary of Two-Way Traffic Flows (Total Survey Period, AM and PM Peak Hours)

Survey Day	07:00-19:00	08:00-09:00	17:00-18:00
<b>Pre-implementation</b>			
July 2014	9,804	860	1,005
Oct 2014	9,353	910	799
<b>Post-implementation</b>			
Mar 2015	8,911	732	859
May 2015	10,055	960	861

### Queue lengths

The queue length survey recorded maximum vehicle queue length back from the pedestrian crossing every 5 minutes during the survey period. Table 2 shows that the longest queue lengths are recorded in the 2014 pre-scheme surveys. This pattern is consistent during the survey periods with the AM, lunchtime and PM peak hours all showing higher queues recorded in the 2014 surveys than the post implementation 2015 survey results. Table 2 confirms that queue lengths have reduced from the pre-scheme to the post implementation period. The queue lengths have reduced in all peak hours and generally across the day in both the eastbound and westbound direction.

**Table 2. Queue Length Survey – Average Queue Lengths (m)**

Survey Period	July 2014	October 2014	March 2015	May 2015
<b>Morning Peak Hour</b>				
Eastbound	93	77	28	33
Westbound	107	65	61	33
<b>Total</b>	<b>200</b>	<b>142</b>	<b>89</b>	<b>66</b>
<b>Lunchtime Peak Hour</b>				
Eastbound	92	96	50	72
Westbound	105	84	112	41
<b>Total</b>	<b>197</b>	<b>180</b>	<b>162</b>	<b>113</b>
<b>Evening Peak Hour</b>				
Eastbound	100	67	45	43
Westbound	63	60	44	28
<b>Total</b>	<b>163</b>	<b>117</b>	<b>89</b>	<b>71</b>
<b>Daily Average (07:00 to 19:00)</b>				
Eastbound	78	75	44	51
Westbound	70	72	90	40
<b>Total</b>	<b>148</b>	<b>147</b>	<b>135</b>	<b>91</b>

### Bus services

Table 3 shows the average differences and percentage difference of all services eastbound and westbound over a seven day period; Negative numbers indicate an improved situation. The average bus journey times have improved overall, although this change is negligible in the peak periods where westbound buses experience a slight increase and eastbound buses a slight decrease.

**Table 3: bus journey times**

Route	Difference in Run Times Year-on-Year for a period of 7 days (seconds)	Difference (%)
<b>Daily Average (07:00 - 22:00)</b>		
Eastbound	-24	-4.7
Westbound	-42	-8.4
<b>Morning Peak (07:00 - 10:00)</b>		
Eastbound	-12	-3.3
Westbound	6	3.0
<b>Evening Peak (16:00 - 19:00)</b>		
Eastbound	-12	-1.4
Westbound	6	2.8

## Pedestrian flows

Figure 1 shows that pre and post implementation results had similar trends with fairly pronounced morning, lunchtime and evening peak periods. Generally the graph shows that there has been an overall increase in pedestrian flows especially during peak periods.

**Figure 1: Total pedestrian flows of adjacent footways**

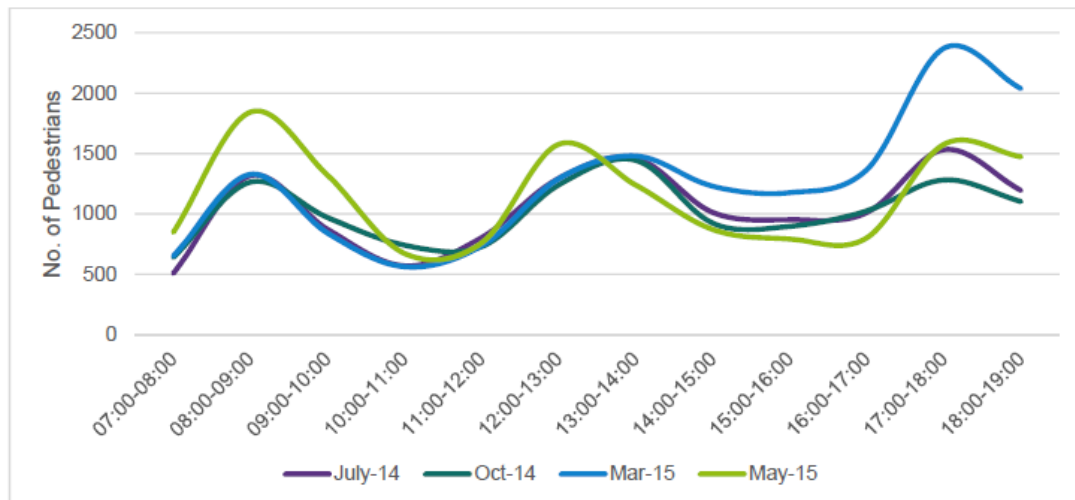


Table 4 shows that, since the implementation of the signalised crossing, more people are choosing to walk along the northern footway rather than the southern footway. The likely cause of the change is that pedestrians are choosing to cross prior to reaching the crossing. A key attraction is St Pauls Churchyard for office workers in the morning on their route from the City Thameslink station near Ludgate Circus to the offices at Paternoster Square and for tourists to St Pauls Cathedral throughout the day.

**Table 4. Pedestrian Flows on Footways**

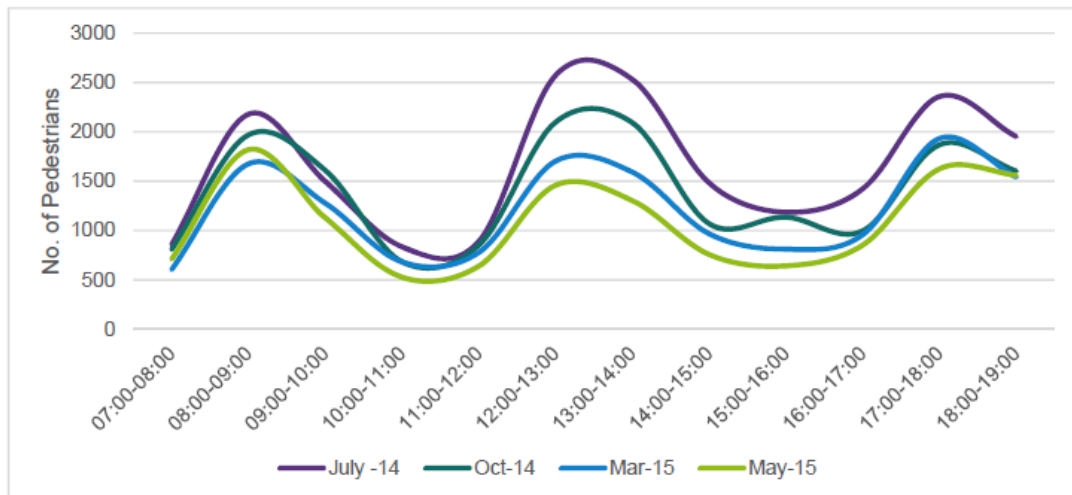
Survey Period	July 2014	October 2014	March 2015	May 2015
<b>Morning Peak Hour (08:00-09:00)</b>				
North	431	443	754	1,011
South	885	820	574	832
<b>Total</b>	<b>1,316</b>	<b>1,263</b>	<b>1,328</b>	<b>1,843</b>
<b>Lunchtime Peak Hour (12:30-13:30)</b>				
North	676	647	1,068	875
South	815	784	297	561
<b>Total</b>	<b>1,491</b>	<b>1,431</b>	<b>1,365</b>	<b>1,436</b>
<b>Evening Peak Hour (17:00-18:00)</b>				
North	560	474	1592	830
South	972	807	780	746
<b>Total</b>	<b>1,532</b>	<b>1,281</b>	<b>2,372</b>	<b>1,576</b>
<b>Daily Total (07:00 to 19:00)</b>				
North	5,239	5,180	10,284	8,149
South	7,286	7,072	4,787	5,623
<b>Total</b>	<b>12,525</b>	<b>12,252</b>	<b>15,071</b>	<b>13,772</b>



### Pedestrian crossings

Figure 2 shows hourly total crossing counts (formal crossing) throughout the survey period. This shows that changing the crossing facility from a zebra to a signalised crossing has resulted in an overall reduction in the number of pedestrians using the formal crossing.

**Figure 2: Total hourly formal pedestrian crossing counts**



Before implementing the scheme, on average 50 pedestrians per hour were crossing informally in July and 22 pedestrians per hour in October. However post implementation results indicate that there was a big increase in informal crossing with an average of 85 pedestrian per hour crossing informally in March and 110 pedestrians per hour in May respectively. Figure 3 shows that overall there has been an increase in the amount of pedestrians crossing informally. It should be noted that due to an issue with the survey footage the October 2014 survey only counted informal crossing in a limited area so has been excluded from this comparison.

**Figure 3: Total hourly informal pedestrian crossing counts**

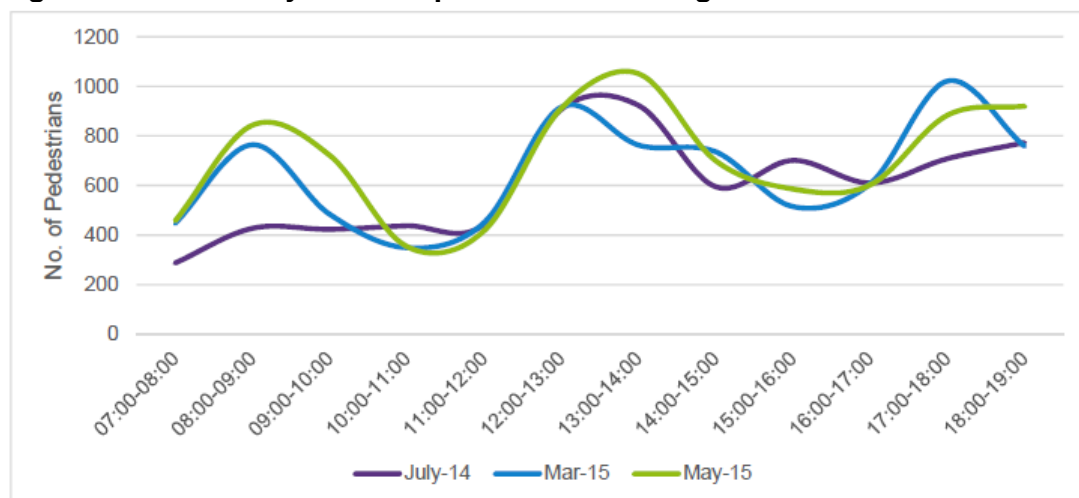


Table 3 shows a breakdown of the informal crossing by whether the crossing took place to the east or west of the formal crossing. The split between informal crossing to the east and west of the formal crossing shows that informal crossing to the east of the crossing has remained similar to what it was before the implementation of the scheme.

Informal crossing levels to the east are high due to the provision of a crossing island which assists pedestrians crossing informally. To the west there has been a significant increase in informal crossing, this is likely to be due to people crossing in the shadow of the crossing and through queuing traffic on the popular route between the City Thameslink train station (on Ludgate Hill to the west of the crossing) and St Pauls Churchyard (to the east of the crossing).

**Table 4: Informal crossing counts**

Survey Period	July 2014	March 2015	May 2015
<b>Morning Peak Hour (08:00-09:00)</b>			
East	368	476	587
West	59	288	256
<b>Total</b>	<b>427</b>	<b>764</b>	<b>843</b>
<b>Lunchtime Peak Hour (12:30-13:30)</b>			
East	865	682	784
West	126	221	317
<b>Total</b>	<b>991</b>	<b>903</b>	<b>1,101</b>
<b>Evening Peak Hour (17:00-18:00)</b>			
East	600	756	584
West	108	265	299
<b>Total</b>	<b>708</b>	<b>1,021</b>	<b>883</b>
<b>Daily Average (07:00 to 19:00)</b>			
East	6,341	5,605	6,061
West	892	2,205	2,385
<b>Total</b>	<b>7,233</b>	<b>7,810</b>	<b>8,446</b>

### Appendix 3 – extract from Road Safety Audit (Stage 3)

**Location:** General to scheme, multiple locations

**Summary:** Carriageway surface may pose a hazard to road users

The Audit Team are concerned that the carriageway surface may pose a hazard to road users, namely:

- On the westbound approach to the pedestrian crossing the higher friction surface (HFS) has not been laid, but the centre line marking has been relocated northwards. As a result, the nearside of the lane has the pre-existing HFS but the offside has no HFS installed. Westbound drivers may be subject to differential skid resistance, particularly in inclement weather conditions. An exacerbated potential for loss of control type collisions may exist as a result.
- In the centre of the crossing carpet a number of service covers have sunk. The sunken covers may pose a trip hazard to pedestrians with an exacerbated potential for trips and falls as a result.
- On the eastbound approach to the pedestrian crossing a trench has been cut and reinstated through the higher friction surface (HFS). As a result, the nearside of the lane has the pre-existing HFS but the offside has no HFS installed. Westbound drivers may be subject to differential skid resistance, particularly in inclement weather conditions. An exacerbated potential for loss of control type collisions may exist as a result.



#### RECOMMENDATION

Provide a consistent and adequate carriageway surface through the pedestrian crossing and its approaches. This may require the provision of higher friction surfacing and the raising of sunken service covers, or, resurfacing the carriageway.

Design Organisation Response	Accepted / Part Accepted / Rejected
[Leave blank for Design Organisation's Response]	
Client Organisation Comments	
[Leave blank for Client Organisation's Comments]	

**Appendix 4 – finance table**

<b>Expenditure to date</b>			
<b>Description</b>	<b>Approved Budget (£)</b>	<b>Expenditure (£)</b>	<b>Balance (£)</b>
Evaluation	20,789	20,789	0
Highways Staff Cost	8,000	7,047	953
CT/EE Staff Costs	45,787	42,466	3,321
Fees	32,400	30,431	1,969
Works	158,701	134,361	24,340
Contingency	10,000	0	10,000
<b>TOTAL</b>	<b>275,677</b>	<b>235,094</b>	<b>40,583</b>