

Submitted to : University Heights Association (UHCA).

A Review of the Revised Transit Impact Assessment (TIA) on the Stadium Shopping Centre Site.

(Revised from original May 18th review document on July 8th*)

Overview.

At first sight the TIA appears to be a reasonable document. But this review will reveal a number of flaws in its structure and conclusions, which cast doubt upon many of the conclusions. It is also worth noting that the models used in this study produce estimates which are only indicative and they can be varied by adjusting the inputs. Some of the key inputs— especially the size of the various land use categories - are never justified. Even the figures in the report show that the existing congestion at peak times on Unwin is going to get far worse, although the report downplays the size of the increase. Moreover, the 45% increase in traffic along Uxbridge, will add to congestion on a junction to 16th Av that is already at capacity. The suggested increase in traffic lanes and turning lanes to solve this problem are not in place, or funded. No development on SSC should be contemplated until they occur. Even if they were added, which is problematic, especially given the funding needs of the city to recover from the floods, the report shows the Level of Service (LOS) figures for the Uxbridge/16th Av junction will barely improve, to a D grade on an A to E scale. This is a minimum improvement, with many of the turning lanes below that level. However, these ‘improvements’ are based on old land use allocations that have been rapidly altered in the change from the draft ARP to the final ARP, creating values 16-20% higher. The old and the new allocations have never been justified. So why does the TIA revision and original report stick to the old land use figures? When the new ones are used, Uxbridge/16th Av becomes as congested as ever at E and F LOS grades, even if the new lanes are added. This conclusion is based on the report’s own figures. These changes also significantly increase the parking numbers required for the massive development.

Given the number of problems revealed in the TIA report it is concluded that the document does not provide an adequate justification of the scale of redevelopment to be allowed under the current zoning at SSC. The congestion problems will not be solved. They will get worse at a junction that links to the Foothills Hospital, presenting a real problem of access and safety. Hence the proposed ARP should be rejected.

*Note: This is a revision of the original review dated April 25 presented to UHA on May 18th. The original Area Redevelopment Plan (ARP) dated April 25, received by UHCA President several days later, was revised on June 25th and later made available to the community. The revised TIA seems to take into account criticisms/clarifications suggested by the Transport Dept. but not from the community. However, the revised report and its predecessor can still be challenged as an inadequate justification for the mammoth development which would be allowed on the small SSC site under this ARP. The very limited time available to the community to review the reports was unfair and did not conform to the city’s requirement for full and meaningful consultation.

Detailed Review

1. Process and link to ARP. The original report was only received by the community ten days before the last Planning Dept.-Community meeting in which the draft Area Development Plan (ARP) was revealed. Similarly there was only two weeks between the date on the revised report and the July 11 deadline for submissions to Council.

i) These short times were unfair. They did not provide enough time for any community -many of whose members have full-time employment - to read, understand and discuss such a technical report. This shows the limitations of the community engagement exercise.

ii) The short time between the date on the original TIA and the draft ARP makes it obvious that the ARP had largely been written *before* the TIA was received. This is the *only* piece of empirical research carried out to justify the ARP and the plans of the developer. There has been no attempt to justify either the scale of the development or the distribution of land uses used by the TIA. The TIA should have been the centrepiece of the first community-planners' meeting in February so that its implications could be discussed. The fact that it was not, shows that the ARP has been created without any proper assessment of the traffic issues and congestion that the development will create. It also indicates the flawed nature of the whole process of so-called community engagement and consultation over the ARP, with far little time for any meaningful discussion of the issues.

2. The Model Approach. The estimates of future traffic flows for 2013-2039 are based on standard models. However apart from naming the models, the formulae on which they are based and the inputs used are *never* specified. It is well known that the results from all models can be adjusted by altering either the parameters in the models or changing the input data. So without this information on formula and data there must always be the suspicion that the results are tailored or altered to fit the views of the modeller, or for whoever pays for the work. *Hence the TIA report can be criticized for being not transparent*, which would allow others to replicate the work in order to confirm the conclusions. This is surely a crucial issue if planning decisions or frameworks such as the ARP are to be evidence-based. Since this type of transparency - a recent city council objective - was not adopted, the reader is in the position of being asked to accept the conclusions on what amounts to faith, not scientific rigour. However, there are sufficient places in the TIA in which questions can be asked about some of the data inputs and the results obtained. In addition to this general point there are aspects of the approach adopted and results obtained that can be questioned, which lead to worrying critiques of the conclusions reached.

3. Questioning the Input Data. The existing traffic counts used as input to the analysis were taken in February 2013 on Monday, Tuesday, Weds. It is likely that flows in winter months are less than those in summer. Unlike the original report the revised report suggests that the seasonal flows only vary by some 2%, so seasonal adjustments in turning flows were not made. This small seasonal variation may be the case for the gross transport flows at the city scale, using a grid of large cells. It is unlikely to be true for small or unique areas such as the area around SSC where seasonal and weekly variations in flow have been observed. For example, there are variations in shopping behaviours during different days of the week which are downplayed. This is actually reported in the both TIA reports, where Table 18, p.47 (revised report) uses data from the parking meters to show the number of people parking each day in the existing parking area. This varies considerably by day of the week: (Sunday-185/M-388/T-583/ W-421/Th-509/F-752/Sat-386 vehicles.

Traffic turning counts in the report were taken on Tuesday/Wednesday, 12-13Feb., yet the average parking figures in SSC for these days is 464. However, the Th/Fr averages are 680. This is 216 higher, a 47% increase! Hence the utility of the traffic count figures in the TIA on T/W as being representative of the variations in flows must be questioned. . They are likely to be under-estimates of the actual flows in this area during the end of the week, not only because of seasonal variations but because they were taken on days of the week with less traffic in the shopping centre.

It is also unclear from the input data whether additional flows from *variations in daily visitors*, such as to the hospital and university etc are included in the model. If so, the figures are never identified. For example, Table 9 (p. 25) which shows predicted employment values for various areas shows the expected increase in employment of 58% for the Hospital area and a 17% employment increase and 134% increase in population (by 5,000 extra students in residence) for the University, does *not* show any figures for the 30,000 students in the university, most of whom commute and significantly affect traffic flows in the area.

Little attention is paid to the way that cars cut through University Heights on their way to the Trans Canada. Residents have observed an increase in short cutting since Childrens' Hospital has opened. The major development at the West Campus is very likely to add an additional element of short cutting through the community and especially an increase on the 29th Av. Unwin-Uxbridge Drive-Trans Canada route, making the congestion on Unwin even greater.

4. Dated or Missing Information. Several tables in the report contain dated information and should have been brought up to date. For example, Table 9 showing employment in the areas around SSC, uses 2006 census data for population and employment. This is already 7 years old and ought to be updated to the 2011 census figures. It is also worth mentioning that the proposed Field House for the Foothills Athletic Park is dismissed on p.26, although could also have a significant spill-over effect on SSC – given the experience of increased congestion during the CFL games at McMahon Stadium. There is no attempt to measure the additional impact of the new building recently confirmed (early 2013) for the Tom Baker Cancer Clinic in the vicinity of 27th Street/16th Avenue which will surely give rise to increased traffic flows to and from 29th Av into 16th Av. although this may be included in the 58% increase in employment for the Foothills Medical Complex.

Surely it is also dubious to use 2006 figures for Mode Split in Table 5. In addition, it is very likely that the figures for the travel habits of people in Apartment Complex area in Univ. Heights will be different from those in the single family dwellings in the area. Any figures should be based on the patterns of the Apartment Complex inhabitants, not generalized to the whole area, especially given the number of senior citizens in the single family dwellings of University Heights (UH). This later point also means that within ten years there is likely to be a major change in the composition of UH as new residents replace the existing ones. In any case the comparison with Coventry Hills and Glamorgan is spurious since UH is surrounded by major employment zones, quite unlike the other two places. It must also be noted that the report states that potential 'right in and out access' at the Uxbridge-16th Av. intersection is currently being explored (p. 30). Given the current congestion on the junction at peak periods this critical matter should be settled well before any final decision on the ARP and development plan can be made. In any case it is dubious that the minor improvements suggested will solve the congestion problem. [The Proposed ARP eliminated the "right in and out access" option.]

5. Operation of the SSC. The TIA does not show a good understanding of the current operation of the SSC. Tables 3 and 4 show the values obtained from an observation of the people, cars etc moving into the centre in between 7 and 9 am and 3-6 pm Thursday Feb .21. When the figures are adjusted to remove those going to school or short cutting through the area, the report claims that an average of 83% of the trips observed are by auto drivers and 14% auto passengers, but only 1% are walkers. This led to the conclusion that there is 'considerable potential to reduce vehicle use'. Such an opinion can be challenged as completely underestimating existing walking use. An questionnaire survey for UHA by an experienced graduate student carried on Friday, May 3rd interviewed (not observed) 214 shoppers throughout the whole 9am-6.00pm period who had entered one or more stores. It revealed that 21% of the shoppers had walked into the centre to shop, with 74% by car, showing there are 20% more walking to shop than counted from the observation study. In addition the survey revealed that 50% came directly from home compared to 41% from work, confirming that the SSC also serves the nearby employment zones. However only 43% of the people coming from home came from neighbouring University Heights/St Andrews Heights/ Parkdale showing that the area acts as a shopping destination for many communities in the North West, who would be unable to walk, or even come by transit to this centre. Hence available parking would be an important consideration for

shoppers who would go elsewhere if parking was not free. Given the scale of the development envisaged by the TIA and the ARP there would be very few surface parking spots available in the proposed centre, not enough to serve the local shoppers.

6. Variations by Adjusting the Model. As noted above, different results can always be obtained by changing the model inputs or parameters. The following discussion is based only on the p.m. peak flows. Similar conclusions come from using the peak a.m. flows. Several examples of the model variations can be seen in the results which impact the degree of congestion in various areas. For example, it is suggested in the revised TIA that a roundabout could be added at the west end of Unwin (Figure 18), to improve the flow along Uxbridge. Then the peak pm flow along Unwin, a collector road between Univ. Drive and Uxbridge increases from the current 587 v.p.m.(vehicles at peak p.m. hourly flow) to 964, instead of the initial predicted flow of 914 without the roundabout. The revised report states (p. 46) that the predicted flows will only be ‘approximately 200 extra vehicles’ per hour at peak times. This is clearly false for the Figures 16 and 18 show values of 50% more than the 200 vehicles on a road that is already congested at peak times. Indeed, Unwin, which is on a bus route, is currently near capacity with 5,500 vehicles/day and the report states is at the ‘upper end of the city’s environ. design thresholds for standards for collector roads’ (p.45). Residents at the community meetings have time and time again alerted planners to the congestion problem of this route but have been ignored. So how can the 55.7% increase or the 64.2% (with roundabout) increases on Unwin be accommodated? There is a small suggestion of traffic measures in the TIA but these simply involve crosswalks and traffic calming and speed tables. They do NOT deal with the huge increase expected in traffic after development, even on the figures predicted by the model. Given the comments made earlier about weekly variations, the predictions are likely to be underestimates of the increase.

The post development figures *turning into* Unwin from University Drive in Figures 16 and 18 also change from 231 (current) to 223 (pd-post development) to 265 (pdr- with roundabout), yet the southward flows along Univ. Drive more than double, from 515 current, to 1106 (pd) 1064 (pdr). Is it really likely that the estimated doubling of traffic along University Drive will produce such a minimal increase turning into Unwin? *This is dubious.* Any increase will add to the flows along an already congested Unwin, which is predicted to get 55% to 64% worse by the model. The report does not deal with the increased volume along University Drive and Unwin during episodic events, such as Stampeder games or Athletic Events in the Foothills Stadium, or even the possibility of greatly increased traffic because of plans for a major Field House in the Athletic Park.

7. Variations in flows along Uxbridge Drive alongside the SSC.

The existing and estimated post development volumes at various intersections along the roads near SSC, especially Uxbridge and Unwin are shown on various flow diagrams (Fig. 6 and 7). However the details of these figures are never made explicit in the report, which has the effect of disguising the size of the increase along Uxbridge, paralleling the SSC.

The revised TIA does *not* clarify the variations in flow along Uxbridge Drive facing the SSC. It is very probable that the city used a traffic cable at the top end of Uxbridge near the Unwin junction, since residents saw this location on a second survey in April, after pointing out that previous figures were taken on a school holiday! . This location underestimates the variation in the existing volume of flows along Uxbridge (Fig.4) - and hence the problem of congestion - while the predictions from the model in Figures 16 and 18 at the TransCanada, or south end, are also far higher. Unlike the original report the revised report does note the difference (p.36) stating that the southern Uxbridge flows are 1350-1565 whereas the northern area of Uxbridge at 1100-1150. There is no information on the reasons for the range, which may be am/pm peak flow differences (Perhaps the comment came from knowledge of the original draft of this review). Yet in Table 4 the existing traffic flows and turnings on junctions shows the figures above the SSC south entrance to be 1,615 and 1,187 in the north at p.m peak. So again the southern volume is undercounted, even by their own figures and it is this which adds to the congestion at 16th Av.. Since the revised traffic report then states that the difference is due to traffic in and out of SSC it shows they did not take this key generator into account in the initial report. Moreover, the revised report does not address the implications of the variations along Uxbridge in terms of the size of the future traffic increases, which are described below.

a)North End of Uxbridge between SSC exit/entrance and Unwin

↔Both directions...819 vehicles/peak p.m. (current figures) to estimated 1,187 in model: a **44.9% increase**

b)South End of Uxbridge between SSC exit/entrance and 16th Av Junction

↔Both directions...1,113 vehicles/peak p.m. (current figures) to estimated 1,615: a **45 % increase.**

These figures show that the current vehicle count varies by 23% (819 north to 1,113 south) along Uxbridge, even in the cold months of February and early in the week, and predictions show a 36% increase along the road, which is not adequately taken into account in the report. There is a suggestion to move the entry exit points into the SSC to other locations. The southern suggestion may reduce the current queuing on the south end of Uxbridge, but this is dubious, given the predicted 45% increase in flows by the model. Moreover, the new northern exit near Unwin will surely only increase the pressure on the Uxbridge/Unwin area since there will be limited space to join the traffic flows.

The predictions to 2039 also show a 45% increase in traffic volumes over current flows on Uxbridge as seen in the turning figures on Figure 16 but is not noted in the text. Surely this major increase should be made explicit?

The report admits that current conditions at the south end of Uxbridge /16th Av. junction are ‘approaching capacity’ (p19) with long queues at the junction, with LOS, Level of Service values (on the A-Good to F-poor scale) at an E grade, meaning long waiting times and congestion. This congestion is something all the UH residents and people around know. It is suggested that adding new turning lanes would improve the current level of service to a D. *This is hardly a major improvement on an A to E scale!* In any case none of these suggestions of extra lanes etc have any firm funding commitments, or priority in the transport plans of the city. So adding such a large dense development on SSC site seems foolhardy and creates unnecessary extra congestion on a critical junction. In any case it is dubious whether the suggested improvements would work as the extra lane on the westbound traffic would have to extend a bridge over University Drive with only a limited zone for weaving into the exit lanes to occur. Problems would also occur if a transit stop is added to the west of the junction since it would impede the traffic in the extra joining lanes.

Later, the report looks at the effect of the predicted traffic flows of the new development on the junction and concludes (p.19) that even with extra lanes and turning lanes the junction at peak times will “be close to capacity”(p.19), with an overall D level of service. Moreover, it can be seen from Table 11 that 40% of the turns are still listed at either E or F, very low service. *So even if major investment in road conditions along the Trans Canada occurs, the effect of the proposed development will mean that the level of service on this junction will virtually be the same at the current congested situation.* So why develop at such high density if the situation is not going to improve significantly? It will only cause problems to the flow of traffic along the Trans Canada and in/ out of the Foothills-Medical Complex, which ought to be a priority.

Moreover the Traffic flows along the TransCanada are themselves predicted to increase, given the figures reported in the TIA, Figure 16: Trans Canada at Uxbridge/29th Av junction

Eastward flow is currently 1,097at peak pm and Westward 1416 (ppm), with estimates of 1,606 and 2,415.

These alone are 49% and 71% increases.

So does the city really want to add a high density development on this junction that will generate an extra 45% of flow from Uxbridge, on to what is going to be an even more congested main highway through the city?

The situation of future congestion may be even worse on this junction than predicted, since there is surely something wrong with the predicted traffic flows along 29th Av (adjacent to hospital-medical complex). These are shown in Figures 4 (current) and 16 (post Development) to change from: 1,294 (ppm) to 1256 (estimated).

So a drop of -2.8% along 29th Av is estimated, despite the huge increase of traffic along the TransCanada and a projected 58% increase in projected employment in the Foothills Hospital Medical Complex! This conclusion seems faulty.

8. Parking Requirements. In the initial TIA the parking requirements for various land uses showed that 2207 parking spaces would be required for this scale of development. In the revised draft the figures are revised, reducing the total to 1695. There is no adequate explanation for the changes. However in Table 19 showing the various parking requirements the calculations for the first two categories (Retail and Restaurants do not appear to be not correct. Surely the figures should be 305 and 90 respectively, not 275 and 100. Similarly the Office and Medical Office figures are shown as 403 and 474 whereas they should be 474 and 557. The total therefore should be 1,889, not 1,715. However, it is worth noting that it is possible to alter all the figures by changing the land use categories, for instance by adding more medical offices than general offices the number of parking stalls increases substantially. Since the balance of the uses is NEVER justified one is left with the conclusion that attempts are made to minimize the parking stall requirements.

It is also worth noting that in the Proposed ARP and the information boards at the St Andrews Community meeting (July 3rd) to explain the ARP to this community, a different set of land use figures was given on one of the information boards and to the Draft ARP figures and presented to the University Heights Association in the meeting to discuss the Draft ARP. See Table 1 below. No explanation has ever been provided of these changing figures or the original land use allocation.

Table 1. Changing Vales of Land Use Distributions

Land Uses		TIA Reports	Draft ARP	Proposed ARP, p11
	Table 12	Table 17		
	Land Use Concept	April and June	May 17 2013	
Retail	73,000sqft	6,781sq.m s	9,720 m2	8,138 m2 (87,597sq ft)
Restaurant (Eat/Drinking)	24,000	1,148 s	3,240	2,676 (28,804)
Residences	310	310 s	310	372
Offices	255,000	23,690 s	23,753	28,428* (305,996 sq.ft)
Medical offices	100,000	9,290 s	9,237	not subdivided
Hotel	200 rooms	200 s	200 rooms	240 rooms

s=same *Medical capped at 11,148 + 120,000sq.ft

Differences in TIA reports to Proposed ARP= 16% increase in floor space and 20% increase in hotelrooms/resid.units.

The latest version of the ARP has figures 16-20% higher than the Draft ART. It is puzzling to find that the initial TIA and the revised version both use the original Land Use figures shown in the initial proposals of Western Securities and in the Draft ARP of 17 April 2013.

The Traffic Assessment and its predictions of future traffic flows are based on an old set of land use figures, even though the revision is dated June 25th. Perhaps one explanation of the change is found in Appendix M of the TIA which is a re-run of the prediction model using land use figures that are 20% higher, presumably to look at the effect of traffic flows higher than expected. These calculations show that the LOS (Level of Service) for the Uxbridge-16th Av intersection fall to E and F grades, even assuming that the new turning lanes and extra traffic lanes at the junction are added, for which no funding has been allocated. So the Proposed ARP is based on a set of land use allocations which produces predictions of poor levels of service (LOS E and F) at the junction, a worse scenario than the D level and many lower LOS figures for various turns predicted in the TIA report with the original land use allocations. It is worth noting that the Uxbridge junction is currently rated at E with many F's, a congested site.

So it does seem that with the Proposed ARP figures the level of congestion on the Uxbridge/16th Av., even with all the extra lanes (not funded) will still be as congested as ever. Of course it will be even worse if more medical spaces are added to the office allocation, which Table 1 shows is 20% higher than the figures used in the TIA reports.

Is this problem of predicted congestion the reason why the TIA report did not comment on Appendix M and used the old Land Use figures?Could there be a hope that nobody would notice that the Land Uses had changed?

The changes in land uses also mean that the parking requirements in the revised TIA need to be altered . Recalculating all the land use-parking stall requirements under city bylaws using the new land use figures revealed on July 3rd and in the final ARP, increases the parking stall numbers to 2,240, not the flawed 1715 in the revised TIA report, together with a 33 stall allowance for better transit service, which does not exist, or the original 2,060 in the first TIA study. This new number of 2240 means a 30.2% increase in the parking needs from the values shown in the table shown in the revised TIA (**Table19, p49**). So whether the parking stall needs are the flawed 1,715 figure shown in the revised TIP, the corrected 1,889 number, or the predicted 2,240 requirements using the 20% higher land use/rooms proportions in early July, this is still a massive number, even if the number is reduced by assumptions about some mythical greater transit use at Development Permit stages as implied by the ARP. The parking requirements should be clear in any ARP report and open to public scrutiny, not manipulated at some later stage.

No attempt has been made in the TIA to show the effect of a presumably underground parking structure on the area, the effect of paid parking on shopping behaviour, or upon the potential retail tenants. Conversations with the retailers in SSC revealed that few believe that their customers would continue to shop in the area if they had to pay for parking; it will be easier to go to a mall, thereby adding, not reducing road traffic along the main arteries. In addition, the inevitable time delays in getting in/ out of such a large structure has not been added to the predictions of traffic flows along Uxbridge. Such large streams of traffic coming out of a parking structure for this number of cars is bound to decrease exit/entry times and add to an already predicted congestion. There is also no consideration paid to delays caused by pedestrian crossings, the location of which are never mentioned in the report. Given the nearby schools and the 600 apartments over the road from SCC, the effect of pedestrian traffic crossing roads Uxbridge and Unwin will be considerable at peak traffic flow times and may well lead to accidents.

It must also be noted that the addition of a Complete Street on Uxbridge may look pretty in a report (see revised TIA) will likely add to congestion, especially if people are allowed to park outside the shops on the road or, as is the current situation, outside houses that line the other side of Uxbridge. In any case the diagram shows two traffic lanes on each side of a median and a bicycle lane in the middle of the traffic lanes (surely not a sensible solution!) as

well as wide sidewalks. This will increase the width of Uxbridge Drive in this area considerably and cut into the SSC property, reducing the ability to reach the suggested density levels, and will almost certainly add to the congestion. The change of slope from Uxbridge to the SSC parking area is also ignored.

As was pointed out in the overview, the TIA does not provide an adequate justification for the huge redevelopment which would be allowed under the ARP.

Submitted to UH CA president, July 8, 2013, by W. Davies

The author has benefited from points raised by other members of the community, especially J. Rowse and D, Richardson.

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