

Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

**Appendix I: AADT Calculations** 



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

# ESTIMATION OF THE AADT IN CONNECTION WITH THE UPDATE TO THE SMARTCITY MASTER PLAN

January 2024

#### INTRODUCTION

- I. Adi Associates has been commissioned by SmartCity Malta to prepare this Note to present the Annual Average Daily Traffic (AADT) estimates in relation to the latest update to the SmartCity Master Plan as proposed in PA/03109/23.
- 2. Prior to the estimation of the trips for the proposed changes to the approved Master Plan for SmartCity, the trip generation model that was applied by Colin Buchanan (CB) in the original Traffic Impact Statement (TIS) and subsequent Addendum prepared for SmartCity Malta in 2008 is presented. These figures are then revised, based on current and local trip rates since the CB TIS was based on UK trip rates. Finally, an estimate is provided for the latest version of the Master Plan (hereinafter referred to as the Scheme).
- 3. Overall, a total of three trip generation scenarios are presented in this Note:
  - Scenario I: 2008 TIS Addendum estimates;
  - Scenario 2: 2008 TIS Addendum revision with local trip rates and internal trip assumptions; and
  - Scenario 3: 2023 Master Plan with local trip rates and internal trip assumptions.
- 4. It is noted that based on surveys undertaken in April 2018, the AADT generated by the currently operational establishments in SmartCity Malta is of 1,418 vehicles. It is unlikely that this has since changed significantly since no new buildings within SmartCity have become operational since then. The average daily flows are shown below.

Table I: SmartCity Malta daily flows (2018)

Daily flow	Vehicles
Weekday	1,660
Saturday	713
Sunday	910

#### THE 2008 TIS ADDENDUM

5. The schedule of accommodation that was used as a basis of the 2008 TIS Addendum is dated December 2007. A summary is provided below.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

Table 2: 2008 TIS: Schedule of accommodation

Land use	Gross Built Area (m²)	Details
Community Centre	1,300	Health centre, nursery, library
		etc.
Conference Centre	3,426	
Hotel	63,382	580 rooms in four hotels
Office	157,036	
Residential – Apartments	24,328	317 apartments, including 110
		serviced apartments
Residential – Villas and townhouses	33,830	50 villas; 77 townhouses
Retail	18,700	

#### Scenario 1: 2008 TIS Addendum results

- 6. The 2008 TIS Addendum was submitted to the former Malta Environment and Planning Authority (MEPA) in January 2008. For all land uses, CB applied UK trip rates from the TRICS database (Version 2007(a)). In order to apply trip rates that are likely to reflect the local conditions of SmartCity Malta, CB did not consider sites that were located in Greater London, local regions, town centres, and local centres. This means that the sites from which the trip rates were derived were located at the edge of town centres, suburban areas, at the edge of towns, or free standing. These do not necessarily represent local conditions.
- 7. **Table 3** shows the estimated 24-hour flows for each individual land use. It is noted that these flows are based on weekday trip rates only and, therefore, cannot be considered as AADT since weekend flows were not taken into consideration. The likelihood is that the AADT will be lower than the total 24-hour flow quoted below since the main trip generator (offices) will generate significantly lower trips on weekends.

Table 3: Scenario 1: 2008 TIS Addendum: 24-hour flows

Land use	Vehicles
Community Centre	494
Conference Centre	1,736
Hotel	3,932
Office	22,262
Residential – Apartments	635
Residential – Villas and townhouses	744
Retail	11,166
TOTAL	40,969

- 8. It is noted that with respect to offices, CB assumed that 22 per cent of employees will work on a two-shift (14 per cent) or three-shift (8 per cent) work schedule, i.e., there will also be some office workers on weekends.
- 9. Following this initial estimate, CB applied trip reduction assumptions that result from internalised trips, i.e., trips that occur within SmartCity Malta. The following reduction in trips was assumed for each land use:



www.adi-associates.com

Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

Hotel: 15 per cent;

• Residential: 5 per cent; and

• Retail: 25 per cent;

10. CB also assumed that all office employees live off site. As a result of the assumptions on internalised trips, the weekday 24-hour flow for each land use was determined as follows.

Table 4: Scenario 1: 2008 TIS Addendum: 24-hour flows (with internalised trips)

Land use	Vehicles
Community Centre	494
Conference Centre	1,736
Hotel	3,342
Office	22,262
Residential – Apartments	603
Residential – Villas and townhouses	707
Retail	8,375
TOTAL	37,519

- 11. The final trip generation estimate in the 2008 TIS Addendum takes into consideration a five per cent shift from vehicles to public transport, and a further five per cent shift from vehicles to other means of transport.
- 12. This resulted in a final estimated 24-hour flow (for the whole project) of **33,583 vehicles**. It is noted that in 2008, the former Malta Environment and Planning Authority approved the SmartCity Malta Master Plan and the relevant environmental and traffic studies based on the above traffic flows.

## Scenario 2: 2008 TIS Addendum revision with local trip rates and internal trip assumptions

- I3. Given that the original TIS was based on the TRICS database, and that parts of SmartCity Malta have since become operational, it was considered appropriate to revise the trip generation estimates and assumptions of the 2008 TIS Addendum. This was done for comparative purposes only.
- 14. Two buildings are currently operational at SmartCity Malta. Following the leasing of both units to a number of entities, it results that SmartCity Malta has a Gross Rentable Area (GRA) / Gross Floor Area (GFA) efficiency rate of 73 per cent as confirmed by Perit Paul Camilleri (see **Attachment I**). The non-GRA consists of lifts, stairwells, service shafts, toilets, telecom and BMS rooms, and common corridors etc. Therefore, in this scenario it is assumed that all subsequent buildings will have a similar efficiency rate. This figure is useful since trip generation and parking demand estimates for offices and retail prepared used by Adi Associates are based on GRA, as opposed to GFA. Therefore, the GRA of the office and retail floor space assessed in the 2008 TIS Addendum are:

• Offices:  $157,036\text{m}^2 \times 73\% = 114,636\text{m}^2$ ; and



www.adi-associates.com

Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

- Retail: 18,700m<sup>2</sup> x 73% = 13,65 lm<sup>2</sup>.
- 15. The land uses assessed in the Addendum also included four hotels with a total of 580 rooms, as well as 110 serviced apartments, comprising 110 bedrooms. For trip generation purposes, the latter were considered as hotel rooms, so that the total number of hotel rooms is 690.
- 16. The trip rates used in this scenario are based on the following local surveys:
  - Hotel: Surveys at a 331-room rural four-star hotel with limited accessibility, located in the northern part of Malta;
  - Office: Data collected from SmartCity Malta<sup>1</sup>;
  - Residential: Surveys undertaken at Blata I-Għolja in Mosta, a residential enclave that comprises 149 residential units with an adult population of 443 persons<sup>2</sup>. This is equivalent to an average of three adults per residential unit. The trip rates were adjusted to reflect the national average household size of 2.23 adults per household; and
  - Retail / F&B: Car park data from The Point, a 16,850m<sup>2</sup> shopping mall in Tas-Sliema<sup>3</sup>.
- 17. The community facilities and conference centre were assumed to generate minimal external trips, and hence were not taken into consideration for trip generation purposes.
- 18. The following internalised trip assumptions were made, which are identical to those applied by CB in the 2008 TIS Addendum:
  - Hotel: 15 per cent;
  - Residential: 5 per cent; and
  - Retail / F&B: 25 per cent.
- 19. The resulting weekday 24-hour flow is shown below. Based on the above assumptions and using local trip rates, the 24-hour weekday flow was estimated at **21,833 vehicles**.
- 20. Weekend trip rates were used to estimate the AADT. The results suggest that the AADT for the 2008 TIS Addendum is **18,247 vehicles**. It is noted that for offices, it is assumed that on weekends there will be 22 per cent of the weekday office trips, as per the CB 2008 TIS Addendum.

 $<sup>^{1}</sup>$  Current office floorspace is 17,706m $^{2}$ , accommodating 800 employees. This translates into an employee density of 22.1m $^{2}$  per employee at 80 per cent occupancy. For the AADT assumptions, however, this was decreased to 18m $^{2}$  / employee.

<sup>&</sup>lt;sup>2</sup> As established from the Electoral Register.

<sup>&</sup>lt;sup>3</sup> Retail / F&B trip rates are based on GRA and using car park data from The Point (both short term and contractual).



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

Table 5: Scenario 2: 2008 TIS Addendum: Revised estimates: Weekday 24-hour flow based on Malta trip rates and internal trip assumptions

Land use	Vehicles
Hotel	1,704
Office	14,905
Residential	2,945
Retail / F&B	2,279
TOTAL	21,833

Table 6: Scenario 2: 2008 TIS Addendum: AADT based on Malta trip rates and internal trip assumptions

Land use	Vehicles
Hotel	1,619
Office	11,583
Residential	2,916
Retail / F&B	2,129
TOTAL	18,247

#### PROPOSED MASTER PLAN CHANGES

- 21. The new Master Plan (PA/03109/23) is proposing a shift from a predominantly office workplace into a locality with more varied land uses and which will now also accommodate new land uses related to education and healthcare. Changes are also proposed to the configuration of the approved road network and include dedicated cycling facilities. Furthermore, the site at San Pietru (Plot O) will no longer be developed; instead, the previously allocated Gross Floor Area (GFA) of Plot O has been transferred to Plot G.
- 22. Overall, the Scheme will result in an increase in the GFA of approximately 55,400 m<sup>2</sup> compared to the approved 2008 Master Plan.
- 23. The table below presents a comparison between the GFA allocations of the approved Master Plan and those envisaged by the proposed amendments.

Table 7: Approved and Proposed Land Use Allocations (GFA)

Landillasa	Approved Master Plan	Proposed Master Plan	Change	
Land Uses	GFA (m²)	GFA (m²)	GFA (m <sup>2</sup> )	
Offices	158,830	34,337	- 124,493	
Commercial	91,670	186,301	+ 94,631	
Residential	62,730	147,990	+ 85,260	
Total	313,230	368,628	+ 55,398	

Note: The commercial land use includes retail / F&B, a hotel, a school, student campuses, and a hospital.

24. Compared to the 2008 Master Plan, SmartCity Malta is now divided into 16 plots with Plots B, C and D<sup>4</sup> representing the existing units built so far. Works at Plot L (the site of the

<sup>4</sup> Plots B and C are the existing office blocks whereas Plot D is the *Shoreline* development which is currently at finishings stage. It is expected to become fully operational by the middle of 2024.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

Institute of Tourism Studies<sup>5</sup>) have commenced, whereas the planning application for Plot A was approved in August 2023<sup>6</sup>. The proposed Gross Floor Area (GFA) of each plot and its land use allocation is shown in the following table.

Table 8: Gross Floor Areas by Plot

Plot	Education	Hospital	Hotel	Office	Residential	Retail / F&B	TOTAL
Α			21,000		16,500		37,500
В				12,929			12,929
С				13,908		5,437	19,345
D					41,090	13,968	55,058
E		23,500					23,500
F						1,000	1,000
G					29,000		29,000
Н					24,400		24,400
I					15,000		15,000
J	4,500						4,500
K					22,000	800	22,800
L	31,896						31,896
М	82,000						82,000
Ν				7,500			7,500
0							0
BLV						2,200	2,200
Total	118,396	23,500	21,000	34,337	147,990	23,405	368,628

Note 1: The retail / F&B for Plot D excludes 13,076 m<sup>2</sup> which is located below street level and considered as non-GFA for planning purposes in the Case Officer Report for PA/01029/18.

Note 2: BLV refers to the Belvedere / Laguna area.

Note 3: The ITS and AUM campuses within Plots L and M include ancillary facilities that fall under other use classes (such as staff and student accommodation, a hotel, and retail and F&B outlets). However, these ancillary uses are not considered to be trip generating and hence presenting them separately is not warranted.

- 25. Specifically, the amendments to the Master Plan will result in:
  - A 240-bed hotel in Plot A;
  - A 200-bed private hospital in Plot E<sup>7</sup>;
  - An additional office block, which will have a higher GFA to GRA (Gross Rentable Area) efficiency ratio of 80 per cent, when compared to the current 73 per cent. This will

<sup>&</sup>lt;sup>5</sup> PA/03575/16: To construct hospitality campus (Institute of Tourism Studies) to cater for local and foreign students and other ancillary facilities including underground parking spaces, gymnasium, two indoor pools and a spa. Permit granted on 11 August 2022

<sup>&</sup>lt;sup>6</sup> PA/03920/22: Proposed development on Plots P5 and P6 (currently in partial use as a temporary car park) with height of ground floor plus ten floors plus two underlying levels comprising Class 3B (tourism and Leisure) Hotel with ancillary facilities and class 1 residential development (95-128 units) as well two floors of underlying parking in lieu of development as proposed in PA 01997/08 ' Construction of an ICT, including all related amenities'. Permit granted on 03 August 2023.

<sup>&</sup>lt;sup>7</sup> As per Project Description Statement for PA/07779/17 and PA/10663/17: Adi Associates Environmental Consultants Ltd, 2018. To Excavate Plots 9 and 10 and to construct a new Class 2A 200-Bed Hospital at Smart City, Kalkara. Project Description Statement. San Gwann August 2018; vi + 32 pp + 4 Appendices.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

result in an overall office GRA of 23,706 m<sup>2 8</sup>;

- Between 953 and 1,060 residential units, depending on the mix of apartment sizes:
  - Plot A: Between 95 and 128 units;
  - Plot D: 365 units;
  - o Plot G: Between 187 and 199 units;
  - Plot H: 69 units;
  - o Plot I: Between 98 and 125 units;
  - Plot K: Between 139 and 174 units;
- Retail and F&B outlets with a retail GFA to GRA efficiency ratio of 75 per cent. This will
  result in a retail GRA of 22,507 m<sup>2</sup>; and
- A school for 650 students (ages 3 to 15), the Institute for Tourism Studies (ITS) Campus for 2,500 students<sup>10</sup>, and the American University of Malta (AUM) Campus for 4,000 students<sup>11</sup>. It is noted that both campuses include ancillary facilities that are primarily targeted at staff and students. These include student and staff halls of residence, F&B and retail outlets, offices, sports facilities, childcare facilities, and a hotel.
- 26. As mentioned, the number of residential units is not fixed to allow for a degree of flexibility due to changing market conditions; a range of between 953 units (lower limit) and 1,060 units (upper limit) is assessed. The following table provides the typology of each scenario in terms of bedrooms per unit. In essence, the lower limit is a scenario where the number of apartments is dominated by one- and three- bedroom units. On the other hand, hand, the upper limit is dominated by one- and two-bedroom units. However, overall the number of bedrooms is likely to be very similar (2,108 for the lower limit compared to 2,102 for the upper limit).

– 23,706 m<sup>-</sup>.

<sup>&</sup>lt;sup>8</sup> (Office GRA Plots B + C) + ((Office GFA Plots N) x 80%)

<sup>=</sup>  $(8,955 \text{ m}^2 + 8,751 \text{ m}^2) + (7,500 \text{ m}^2) \times 80\%$ 

 $<sup>= 23,706 \</sup>text{ m}^2.$ 

<sup>&</sup>lt;sup>9</sup> (Plot D GRA) + (Plots C + F + K + Belvedere) x 90%

 $<sup>= (15.429 \</sup>text{ m}^2) + (5.437 \text{ m}^2 + 1.000 \text{ m}^2 + 800 \text{ m}^2 + 2.200 \text{ m}^2) \times 90\% = 22.507 \text{ m}^2.$ 

<sup>&</sup>lt;sup>10</sup> Based on Doc222s of PA/03575/16.

<sup>&</sup>lt;sup>11</sup> The 4,000 student figure is for both the Bormla and SmartCity campuses, based on media reports. There is no indication of how many will be accommodated in the SmartCity campus. The worst case (4,000 students) is assumed.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

Table 9: Residential configuration: lower limit

	Number of bedrooms					
Plot	I	2	3	4	5	Total
Α	6	40	41	8		95
D	226	78	61			365
G	39	44	97	7		187
Н				34	35	69
I	24	16	54	4		98
K	24	28	82	5		139
Total units	319	206	335	58	35	953
Total bedrooms	319	412	1,005	232	140	2,108

Table 10: Residential configuration: upper limit

Number of bedrooms						
Plot	ı	2	3	4	5	Total
Α	44	52	30	2		128
D	226	78	61			365
G	49	65	73	12		199
Н				34	35	69
I	45	64	6	10		125
K	70	69	10	25		174
Total units	434	328	180	83	35	1,060
Total bedrooms	434	656	540	332	140	2,102

27. The overall schedule of accommodation is summarised below, with a comparison against the development as assessed in the 2008 TIS Addendum provided as well.

Table II: Comparison between the 2008 TIS Addendum and 2023 Master Plan

Land use	2008 TIS Addendum	2023 Master Plan	Change
Community Centre	I,300m <sup>2</sup> GFA	-	- 1,300 m <sup>2</sup> GFA
Conference Centre	3,426m <sup>2</sup> GFA	-	- 3,426 m <sup>2</sup> GFA
Education	-	650 students / 150 staff	+ 650 students / + 150 staff
		2,500 post-secondary	+ 2,500 students / + 361 staff
		students / 361 staff	
		4,000 tertiary students /	+ 4,000 tertiary students /
		320 staff	+ 320 staff
Hospital	-	200 beds	+ 200 beds
Hotel	580 rooms	240 rooms	- 340 rooms
Office	157,036m <sup>2</sup> GFA	34,337 m <sup>2</sup> GFA	- 122,699 m <sup>2</sup> GFA
Residential	334 units	953 / 1,060 units	+ 619 / 726 units
	772 bedrooms	2,108 / 2,102 bedrooms	+ 1,336 / 1,330 bedrooms
Retail + F&B	18,700m <sup>2</sup> GFA	36,481 m <sup>2</sup> GFA	+ 17,781 m <sup>2</sup> GFA
Serviced apartments	110 units	-	- I I 0 units

Note 1: The Retail / F&B land use includes 13,076 m<sup>2</sup> of non-GFA within Plot D (i.e. below ground level) since this is a trip generating floor area.

Note 2: Estimated staff at ITS Campus based on Doc 222s of PA/03575/16.

Note 3: Estimated staff at the AUM Campus was based on details in the Case Officer Report for PA/01189/16 (the Bormla Campus) where it was envisaged that it would accommodate 500 students and 40 staff.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

#### Scenario 3: 2023 Master Plan with local trip rates and internalised trips

- 28. Since the Scheme is still at Master Planning stage, certain details are absent, especially where information is pending from third parites (such as by AUM). Nonetheless, the AADT estimates have been worked out using the information and assumptions provided above.
- 29. Local trip rates were used to estimate the weekday 24-hour flow and AADT. These are based on the following local surveys:
  - Hospital: Surveys undertaken at the Gozo General Hospital;
  - Hotel: Surveys at two rural four-star hotels located in the northern part of Malta;
  - Office: Data collected from SmartCity Malta<sup>12</sup>;
  - Residential: Surveys undertaken at Blata I-Għolja in Mosta, a residential enclave that comprises 149 residential units with an adult population of 443 persons<sup>13</sup>. This is equivalent to an average of three adults per residential unit. The trip rates were adjusted to reflect an estimated density at SmartCity Malta of 2.2 adults per unit<sup>14</sup>;
  - Retail / F&B: Car park data from The Point, a 16,850m<sup>2</sup> shopping mall in Tas-Sliema<sup>15</sup>; and
  - School: Surveys undertaken at an independent school located in the North Harbour area with the trip rates adjusted to reflect an overall school transport modal share of 75 per cent whereas 95 per cent of staff use their private car.
- 30. The estimated office trips are based on the net increase of 6,000 m<sup>2</sup> GRA since 17,706 m<sup>2</sup> already exist. The office trip rates were adjusted to reflect a higher density of 18 m<sup>2</sup> per employee compared to the current density at SmartCity Malta of 22.1 m<sup>2</sup> per employee. Furthermore, as per the 2007 TIS it was assumed that 22 per cent of employees will work on a two-shift (14 per cent) or three-shift (8 per cent) work schedule, i.e. there will also be some office workers on weekends.
- 31. Trip estimates for the proposed ITS and AUM campuses were based on TRICS data for three colleges and a university having a combined average student population of circa 9,500 students and located at the edge of town centres. This was considered relevant in this case given that ITS students would typically arrive at the Institute using public transport whereas AUM mostly markets itself to foreign students who will be subsequently accommodated at SmartCity or nearby.

<sup>&</sup>lt;sup>12</sup> Current office GRA is 17,706m<sup>2</sup>, accommodating 800 employees. This translates into an employee density of 22.1m<sup>2</sup> per employee at 80 per cent occupancy.

<sup>&</sup>lt;sup>13</sup> As established from the Electoral Register.

<sup>&</sup>lt;sup>14</sup> An occupancy of one adult per bedroom was assumed, which implies that the lower limit of the residential range translates into a higher population density:

Lower limit: 2,120 adults / 968 residential units = 2.2 adults per unit.

Upper limit: 2,109 adults / 1,042 residential units = 2.0 adults per unit

<sup>&</sup>lt;sup>15</sup> Retail / F&B trip rates are based on GRA and using car park data from The Point (both short term and contractual).



www.adi-associates.com

Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

- 32. With respect to the retail / F&B land uses, it is assumed that 10 per cent of the floor area will be allocated to F&B.
- 33. The following internalised trip assumptions were made, which are identical to those applied by CB in the 2008 TIS Addendum, and also considered in Scenario 2:

Hotel: I5 per cent;

Residential: 5 per cent; and

Retail / F&B: 25 per cent.

- 34. The proposed hospital was assumed to have a similar internalised trip reduction as that of the hotel. Similarly, the school was assumed to attract 15 per cent of its students from the resident population. No internalised trip reductions were made to the ITS and AUM estimates since the original trip rates are already sourced from edge of town centre sites which reflect a lower trip generation.
- 35. It is noted that no assumptions of internalised trips in relation to the office workers were originally considered in the 2008 TIA Addendum. Given that the 2023 Master Plan is proposing a range of between 953 and 1,060 residential units, it is highly likely that some people will live and work in SmartCity Malta. Assuming an average occupancy of one adult per bedroom (i.e. an adult population of 2,108 residents) and that one adult from every four residential units works in SmartCity Malta, this translates into 238 adults who live and work in SmartCity Malta (or 11.3 per cent of the adult resident population).
- 36. For trip generation purposes, residents were divided between adults who work in SmartCity Malta (238 persons) and those who do not (2,108 238 = 1,870 persons). Observations at the Blata I-Għolja residential enclave showed that the average household size is three adults per household, with each adult undertaking 4.1 trips per day; the estimated household size in SmartCity Malta is of 2.2 adults per unit (as explained above).
- 37. In order to account for internalised residential trips, it was assumed that residents who do not work in SmartCity Malta will similarly undertake 4.1 trips per day, i.e. 28.7 car trips per week. On the other hand, it was assumed that residents who work in SmartCity Malta, will undertake 8 car trips of per week out from / into SmartCity Malta. Therefore, the residents who do not work in SmartCity Malta will perform a weekly total of 53,662 trips (1,870 adults x 28.7 trips per week); those who do will make a weekly total of 1,906 trips (238 adults x 8 trips per week) for a combined weekly total of 55,568 residential trips.
- 38. The above was translated into a percentage by first calculating the total weekly residential car trips should none of the residents work in SmartCity Malta. This would be equivalent to 60,500 trips (2,108 adults x 28.7 trips per week). This means that in this Scenario, the

<sup>16</sup> SmartCity Malta offers a mix of land uses that encourages residents to be served within SmartCity itself (retail, in particular, which can take the form of pharmacies, convenience shops, stationeries etc.).



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

internalised trips for residents is equivalent to 8.2 per cent (1 - (55,568 / 60,500 trips)), as opposed to the five per cent considered by CB.

39. With respect to office workers, the total number of office employees is estimated to reach 1,133 workers<sup>17</sup>. Since 238 of these are likely to live in SmartCity Malta, then the internalised office trips are equivalent to 21.0 per cent (238 residents / 1,133 office workers).

40. To summarise, the following reduction in trips was assumed for each land use:

Hospital: 15 per cent;

Hotel: 15 per cent;

Offices: 21 per cent;

• Residential: 8 per cent;

Retail / F&B: 25 per cent; and

• School: 15 per cent.

41. Based on the above, the 24-hour weekday flow was estimated at 18,650 vehicles.

42. Using weekend trip rates, the 2023 Master Plan is estimated to result in an AADT of 17,000 vehicles, which is lower than the revised estimates in Scenario 2 (2008 TIS Addendum revision with local trip rates and internal trip assumptions) of 18,247 vehicles, see below.

Table 12: Scenario 3: 2023 Master Plan: Weekday 24-hour flows with internal trips

Land use	Vehicles
Hospital	1,777
Hotel	428
Office	614
Residential	8,019
Retail / F&B	3,292
School	940
School (ITS & AUM))	1,920
Total	16,990
Current	1,660
TOTAL	18,650

<sup>&</sup>lt;sup>17</sup> Current employees + future employees at one employee per 18m<sup>2</sup> 800 current + 6,000 m<sup>2</sup> / 18m<sup>2</sup> = 1,133 office employees.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

Table 13: Scenario 3: 2023 Master Plan: AADT with internal trips

Land use	Vehicles	
Hospital	1,658	
Hotel	427	
Office	477	
Residential	7,927	
Retail / F&B	3,050	
School	671	
School (ITS & AUM))	1,371	
Total	15,581	
Current	1,418	
TOTAL	17,000	

#### CONCLUSION

- 43. This note has presented estimates of the Annual Average Daily Traffic (AADT) and peak hour flows that will result from the proposed amendments to the Master Plan of SmartCity, based on the latest GFA of 368,628 m<sup>2</sup>. A number of scenarios are included that are described further below.
- 44. Scenario I presents the 24-hour flows and relevant assumptions that were calculated by CB in the 2008 TIS Addendum. The estimated flows with, and without modal shift are included.
- 45. Scenario 2 was done for comparative purposes only. This scenario presents the estimated 24-hour flows and AADT, using the 2008 TIS schedule of accommodation as a basis, but applying local trips rates together with the internalised trip assumptions considered by CB.
- 46. Finally, Scenario 3 applies the local trip rates and updated internal trip assumptions to the latest configuration of the Master Plan. This scenario also includes the current AADT of 1,418 vehicles and the average daily weekday flow of 1,660 vehicles.
- 47. The summarised results in **Table 14** indicates that the trip generation and 24-hour flows provided in the 2008 TIA Addendum (Scenario I) will not increase as a result of the 2023 Master Plan. The figures also show that with the increase in the floor area proposed by the 2023 Master Plan and using the current trip generation rates and updated assumptions on internal trips, the weekday 24-hour flow (Scenario 3) is significantly less than what was estimated in 2008 (Scenario I). It is noted that the Scenario I estimates were used as a basis of all the environmental and traffic impact studies that were part of the 2008 approved SmartCity Malta Master Plan.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

#### Table 14: Summary of Results: 24-hour flows and AADT

Scenario	Weekday 24-hr flow	AADT
Scenario I: 2008 TIS Addendum	37,519 * 33,583 ^	-
Scenario 2: 2008 TIS Addendum revision with local trip rates and internal trip assumptions	21,833	18,247
Scenario 3: 2023 Master Plan with local trip rates and internal trip assumptions	18,650	17,000

<sup>\*</sup> Excludes reduction due to modal shift, since none were considered in the subsequent scenarios.

Note: Scenario 3 includes current flows.

Yury Zammit

Senior Transport Consultant

Adi Associates Environmental Consultants Ltd

<sup>^</sup> Estimated 24-hr flow with reduction due to modal shift.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com

### Attachment I:

**Email from Architect** 



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com www.adi-associates.com

Dear Sirs.

Please find attached a sample floor plan of one of the office floors in Building01, namely level2, which is colour coded to indentify the GRA areas; which shows that the GRA constitutes 73% of the GFA. If required, we could provide this for all the floors.

Perit Paul Camilleri

Kind regards,

Paul

Paul Camilleri

#### **PAUL CAMILLERI & ASSOCIATES**

Architects, Structural Engineers and Cost Consultants
127, Archbishop Street, Valletta VLT1444, MALTA
tel:(+356) 2122 4889/2123 8876/2123 6906
fax:(+356) 2123 7632

e-mail: <u>perit@paulcamilleri.eu</u> visit: <u>www.paulcamilleri.eu</u>

This e-mail (including any attachment/s) is confidential and may be legally priveleged. If you are not the intended recipient, you must not copy, use, disclose, distribute or rely on the information contained in it. If you have received this e-mail in error, please notify the sender immediately by reply e-mail and delete the e-mail from your system. Confidentiality and legal privilege attached to this communication are not waived or lost by reason of mistaken delivery to you. Unauthorised interception or use of this e-mail or the information contained therein may be a violation of law.

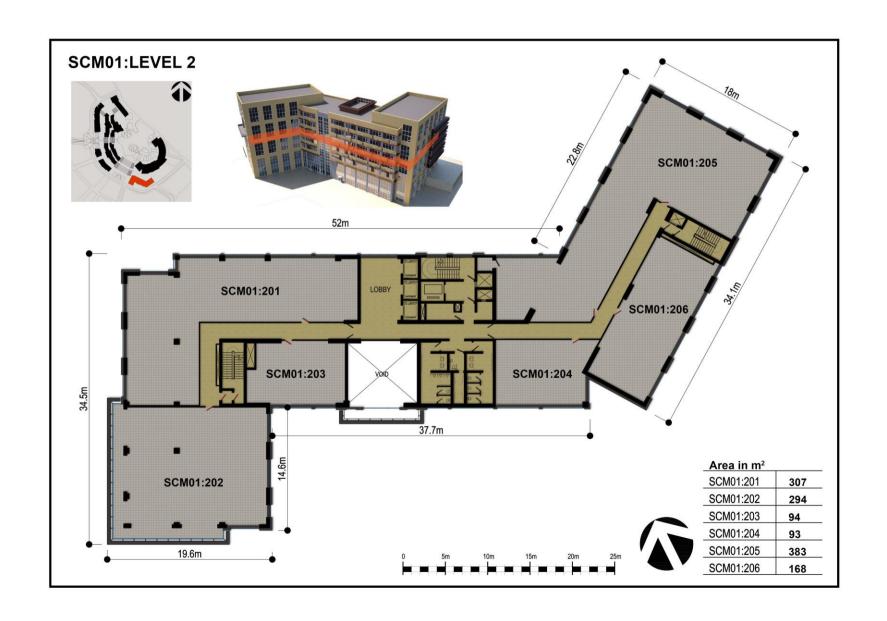
We have taken precautions to minimise the risk of transmitting software viruses, however we cannot guarantee that this email or the attachment(s) are unaffected by computer virus/es, corruption or other defects. The recipient should check this email and any attachment/s for the presence of viruses. We do not accept liability for any loss or damage caused by software virus/es, corruption or other defects which may inadvertently be transmitted.

We would finally ask that you consider the environment and potential waste before you print this e-mail - a screen view may suffice.



Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com





Tel/Fax +356 21378172 / 21378177 info@adi-associates.com

www.adi-associates.com