

Proposed Submission Plan:MK Topic Paper: **Transport**

Purpose

1. The purpose of this paper is to supplement the transport modelling evidence on the impacts of the growth planned in Milton Keynes in the period up to 2031, and the Mobility Strategy which provides the high level transport strategy for the borough. Together these form the transport evidence base for Plan MK, and should provide reassurance that the impact on transport from the growth is acceptable in planning terms.

Background

2. The transport modelling reports into the cumulative effects of committed growthⁱ and the new growth proposed in Plan MK with minimal mitigation has shown the following key headline impacts:
 - Significant overall increase in traffic in the 2031 reference case, with greater jobs than housing growth fuelling increases in car journeys from outside Milton Keynes to central Milton Keynes.
 - Worsening situation in both AM and PM peaks, with entry point links (A421, A5, A509, A422 and M1 junctions) generally more stressed alongside the internal central MK network due to the greater levels of in commuting.
 - The Plan MK growth scenarios cause limited significant further impact on the network, other than links and junctions in close proximity to where this additional growth is located.
3. Additional work is ongoing to test a range of highway mitigation measures. This work will be published in due course ahead of the examination of Plan:MK.
4. The Mobility Strategy adopted March 2018 covers the period to 2036 but is informed by an outlook to 2050 and the expectation that Milton Keynes will have grown to a city of 400,000 people as per the Futures 2050 reportⁱⁱ. To support delivery of this growth the mobility strategy outlines an increased role for cycling, passenger transport/buses and technology in providing mobility for all, travel choices, an effective network with reduced impact on the environment, health and safety.

Transport Context

5. Whilst the transport model is the best tool we have available to forecast future highway network conditions and the impact of new development there is significant uncertainty over the level of traffic growth that will materialise in the next 15 years. This paper seeks to outline some of these uncertainties and

provide some comfort that there is sufficient flexibility in the local transport network to accommodate various traffic growth scenarios.

The potential for modal shift

6. The Milton Keynes Multimodal Model (MKMMM) provides a forecast of traffic conditions to 2031, but assumes little in terms of travel behaviour change or the application of the Mobility Strategy. Appendix A compares journey to work data for Milton Keynes to a number of comparator urban areas (in the south/midlands of England, of similar size to Milton Keynes today and the size it aspires to be). Milton Keynes Borough has a high car mode share for journey to work relative to other urban local authorities, among both its resident population and its workplace population.
7. Milton Keynes is well placed to encourage a modal shift over the next 15 years. The town has an enviable 320km of cycle (redway) network segregated from the grid roads, although the grid roads themselves provide fast and direct access by bike too. The Mobility Strategy commits to upgrading and extending the redway network. This will be supported by other initiatives to promote and encourage cycling. Cycling to work levels are currently very low at 2.8%, and given what is achieved in other areas a doubling of this should be considered realistic in the next 15 years. The Mobility Strategy includes a number of activities to deliver this, including an ongoing programme of upgrades to super redway routes to encourage use by commuters.
8. Bus satisfaction data, and feedback received during the recent Mobility Strategy consultation (see Appendix B) indicates there is significant scope to increase the attractiveness of bus travel in MK. In comparison to other towns and cities, Milton Keynes has very low rates of bus travel to work (5.5%). The Mobility Strategy includes proposals to work in partnership with bus operators to improve service levels focussed on a premium network, to extend bus services into new areas of development and to introduce more bus priority measures around the town.
9. The majority of parking spaces (76%) in central MK are controlled by the council, providing a strong policy lever to influence future travel behaviour, in combination with improvements in alternative modes of travel to the private car. Parking costs currently are very low in comparison to other towns and cities in the region.

East West Rail and Oxford Cambridge Expressway

10. The MKMMM features a public transport model and includes East West Rail however it is acknowledged this will not provide a definitive view of such a scheme, given the model is designed to only assess the impact of relatively small changes to existing service levels rather than the addition of a completely new serviceⁱⁱⁱ. The model potentially underplays the impact of this scheme, and its impact on rail mode share in Milton Keynes.

11. The proposed Oxford Cambridge expressway which could come forward by 2031 overall presents further uncertainty for local highway network demand. If a new highway alignment is chosen to deliver the scheme, rather than the existing A421 alignment, there would be potential for some longer distance east west traffic to be removed from the local network (notably the existing A421) in Milton Keynes, providing the right connections were made east and west of the town. However the scheme also risk drawing in more car based traffic from further afield, inducing more highway network demand into and out of Milton Keynes as longer distance commuting trips are facilitated.

The impact of demand responsive transport, shared mobility and reduced car ownership

12. Over the next few years the Mobility Strategy seeks to support the development of demand responsive transport services in the borough. Coupled with support for Mobility as a Service (MaaS) products and shared mobility solutions (car clubs, bike clubs, etc.) these could transform the travel choices available to residents and commuters. Alternatives to car travel could become more appealing and easier to use. For some people this could enable them to relinquish their car or second car, resulting in significant cost savings and reducing their levels of car use.
13. There are many uncertainties concerning the pace and degree of implementation of these new mobility services, and whether the end result and receptiveness of the public will translate these into widespread use of alternatives to the private car, and reduced car ownership and use. However the potential to significantly reduce highway network demand is there, and the local policy environment aims to be supportive of this.

A resilient network

14. The Milton Keynes road network is unique when compared to most other urban areas in England, with respect to its grid network and urban form. It has been designed with the automobile in mind, and road users benefit from its fast roads, limited congestion, connectivity and choice of multiple route options.
15. The reference case^{iv} highway assignments show that the journey times across Milton Keynes increase on average by 14% and 15% in the AM and PM Peaks respectively. The impacts of the additional Plan:MK growth do not significantly add to average journey times across the whole simulation area, although some routes do have notable impacts^v.
16. With the further mitigation to be tested in the model, as well as more detailed measures that will be included as mitigation to accompany future planning applications, the impacts on journey times across the overall network would be expected to be reduced.
17. However the forecast increases in journey times should be placed in context to the comparatively good journey times currently experienced in Milton

Keynes. Appendix C shows how an average journey speed of 34.7 mph on the locally managed A roads in the borough compares well to a range of comparative towns and cities where speeds range from 16.7mph to 25.9mph, and the average of 18.4mph for urban areas in England. Average travel times would need to increase by 89% to fall as low as the England average speed on locally managed A roads.

18. Whilst a decline in average speeds is not desirable, and the Mobility Strategy aims to keep travel times broadly stable, there is some capacity in the network to tolerate a decline without harming the competitive advantage Milton Keynes has over other areas.
19. The Mobility Strategy puts an emphasis via its objectives on reliable journey times. The investment being delivered during 2018-2020 in a new Urban Traffic Management and Control System (UTMC) will support this objective. This will enhance the council's ability to plan and manage the network, respond to unplanned incidents, inform travellers and assist in making optimum use of the available network.
20. A further factor to consider when interpreting the forecast network impacts of the growth planned to 2031, is that the network experiences very pronounced peaks in demand, with little evidence of peak spreading. Appendix D demonstrates this using traffic counts available from a number of key points in the network. Whilst difficult to predict what future travel demand profiles will look like, factors such as the forecast increase in peak time congestion and continued increases in flexible working practices will encourage a flattening out of these peaks, contributing to some reduced demand in the peak travel periods. Were the peaks less pronounced in current travel conditions, there would be reason to believe further spreading and its impact on peak demand may be limited, but this is not the case.

Viability of future park and ride proposals

21. A final consideration is the established commitment (having been a feature of previous Local Transport Plans) outlined in the Mobility Strategy of a more developed park and ride system in Milton Keynes. This would build on the existing provision of a single park and ride site close to junction 14 of the M1, to provide a more comprehensive multisite system. One of the main drivers of travel demand in future years will be the continued growth in employment in central Milton Keynes, strengthening its role as a regional employment hub and importer of labour from surrounding areas. Park and rides are a logical approach to accommodating high peak commuter traffic flow, particularly where these are drawn from a semi-rural catchment difficult to serve by public transport.
22. Whilst new park and ride sites and a comprehensive system which could reallocate significant central parking capacity to the outlying park and ride sites may not come forward until after 2031 (based on Mobility Strategy delivery timescales). The success and viability of it will rest on some constraint to private car use. Future increases in congestion and journey time

for general traffic, may benefit the park and ride system providing the public transport services are sufficiently segregated from the traffic congestion. This segregation either at grade or through grade separation can be achieved using the grid road network and the generous reservations of highway land along these.

23. Bus priority could be a solution in the medium term to provide attractive park and ride services, but the Mobility Strategy outlines rapid mass transit systems being implemented in the long term to serve the park and ride sites. These rapid mass transit systems are currently not expected to come forward until after 2031, and will enable even more ambitious modal shift away from single occupancy car use.

Conclusion

24. New road capacity will be needed as Milton Keynes grows to access new areas of development and accommodate the increases in travel demand on the local network. However there are limitations of a capacity led approach to mitigate the effects of the growth to 2031, where forecasts show numerous junctions being over capacity peak travel periods in 2031. Pursuing such an approach would likely just move capacity issues further along a corridor, creating pressures and generating re-routing elsewhere on the network.
25. The traffic model forecasts are a useful tool to plan transport improvements and guide land use planning, however it does not provide a full enough appreciation of potential future transport conditions. Interpretation of the model outputs need moderating by an understanding of how travel demand could change in future as a result of the mobility strategy but also wider trends in mobility and behaviours.
26. Even with this appreciation of uncertainties over future highway demand, and accepting that the network will be under more pressure in future years there are reasons to be comfortable with this given the capacity of the network to soak this up, and its benefit to future efforts to achieve modal shift and operate an effective park and ride system.
27. By outlining the transport context and application of the Mobility Strategy this paper has sought to provide reassurance that the growth planned to 2031 can be accommodated in transport terms.

ⁱ MKMMM Update : Forecasting Report Nov 2017 and MKMMM Impacts of Plan:MK (hyperlinks below)

ⁱⁱ Making a Great City Greater, MK Futures 2050 Commission:

<http://www.mkfutures2050.com/images/pdfs/reports/MK50-Futures-Report-1-FINAL-SP.PDF>

ⁱⁱⁱ MKMMM Update : Forecasting Report Nov 2017, paragraph 1.9.3 https://www.milton-keynes.gov.uk/assets/attach/48913/MKMMM%20Traffic%20Forecasting%20Report_v3.1.pdf

^{iv} MKMMM Update : Forecasting Report Nov 2017, Table 27 https://www.milton-keynes.gov.uk/assets/attach/48913/MKMMM%20Traffic%20Forecasting%20Report_v3.1.pdf

^v MKMMM Impacts of Plan:MK (section 9.6) <https://www.milton-keynes.gov.uk/assets/attach/48394/MKMMM%20Impacts%20of%20PlanMK.pdf>

Appendix A: Potential for mode shift (Cycle and PT to work comparisons)

Town/City	2001 Primary Urban Area population	2011 Population (LA)	Residents							Working population	
			% of journeys to work as car driver (2011)	% of journeys to work as car passenger (2011)	% of journeys to work on foot (2011)	% of journeys to work by bicycle (2011)	% of journeys to work by bus/coach (2011)	% of journeys to work by train/metro (2011)	% residents work mainly at home	% workplace population drive to work in car/van	
Leicester	329,600	329,839	49.3	7.9	16.2	3.6	13.3	1.3	6.9	55.9	
Coventry	316,900	316,960	56.6	7.8	10.9	2.6	10.8	2.2	7.4	61.0	
Nottingham	303,900	305,680	43.8	5.3	15.5	3.5	19.7	3.1	7.2	51.6	
Luton	203,600	203,201	55.0	8.4	12.6	1.3	7.3	6.1	7.0	60.9	
Northampton	200,092	212,069	62.0	7.2	10.4	2.6	6.8	1.7	8.0	65.9	
Milton Keynes	186,949	248,821	62.0	6.3	7.1	2.8	5.5	4.3	9.8	67.2	
Stevenage		83,957	60.7	6.1	8.8	2.4	5.8	7.1	7.5	64.5	
Peterborough	136,963	183,631	57.5	8.5	8.5	5.7	7.3	2.5	8.2	63.4	
Oxford	145,095	151,906	32.4	3.1	16.8	17.0	15.9	2.6	10.6	43.5	
Cambridge	131,144	123,867	30.0	2.7	14.5	28.9	6.4	4.8	11.0	46.6	

Key points to note:

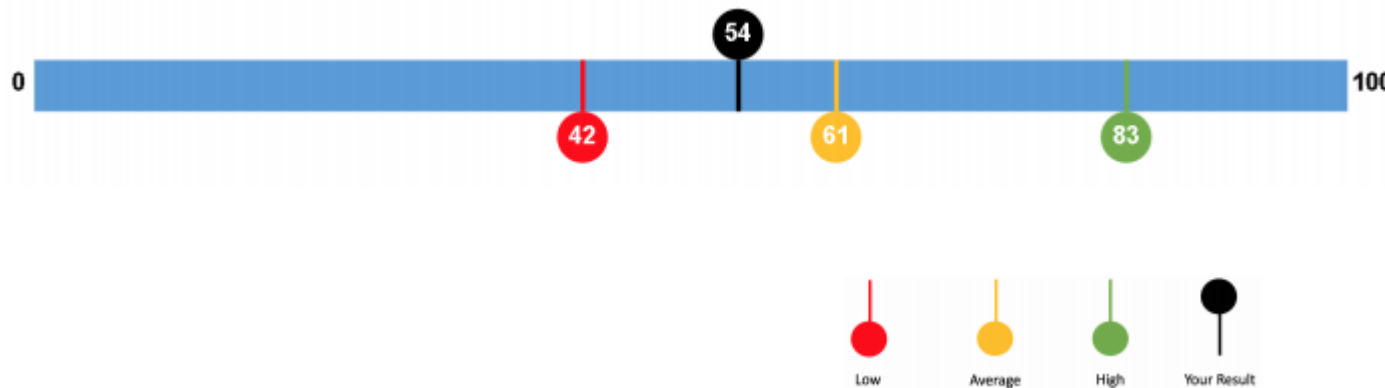
- MK exhibits the highest car modes share to work for both its residents and workplace population, it also exhibits the lowest walking and bus use mode shares, and comparably low levels of cycling among its resident population. Rates of working from home are quite high but still below those in Oxford and Cambridge.
- Other towns with park and ride (Oxford and Cambridge) illustrate what impact an effective park and ride strategy can have on car travel to work, and towns with a better public transport infrastructure (Nottingham) illustrate the levels of bus use to work that can be achieved. Oxford and Cambridge stand out as towns with a strong cycling culture and student population with this reflected in their cycling to work figures. The topography and extensive network of segregated cycle ways (redways) suggest a lot of potential to increase the cycling mode share.

Appendix B: Bus Satisfaction information

The NHT Network conducts an annual public satisfaction survey on a range of transport and highway services. It allows comparison between local authorities in comparison to each other, regional averages, peer groups and the national average.

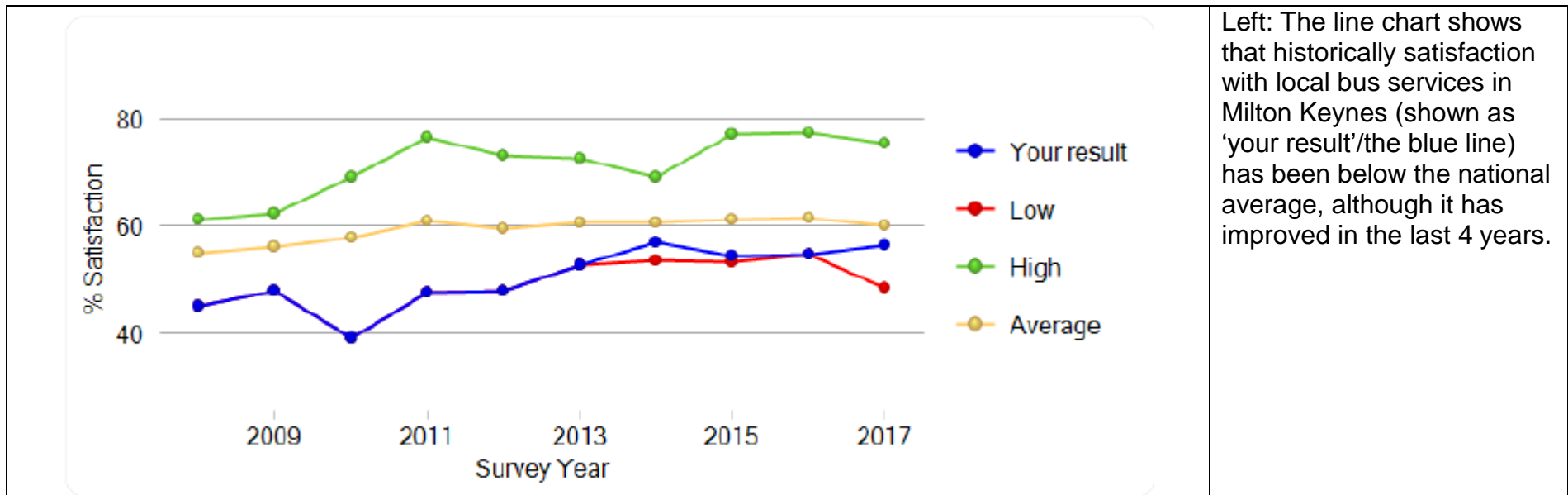
Reports and further information can be accessed at: <http://www.nhtnetwork.org/nht-public-satisfaction-survey/findings/>

2017 Satisfaction with Local Bus Services (KBI 07)



Left: The graphic illustrates satisfaction with local bus services in Milton Keynes (shown as 'your result'/in black). At 54% this is below the national average of 61%, and well short of the 83% scored by the highest performing local authority (Reading Borough Council).

705 local residents responded to the survey question.



Left: The line chart shows that historically satisfaction with local bus services in Milton Keynes (shown as 'your result'/the blue line) has been below the national average, although it has improved in the last 4 years.

The NHT Survey satisfaction results with local bus services were reflected in recent feedback following the public consultation exercise on the Milton Keynes Mobility Strategy, which took place between December 2017 and February 2018¹. Based on the 400 survey responses received only 18% had a positive opinion of local bus service provision and 41% considering provision to be poor or very poor.

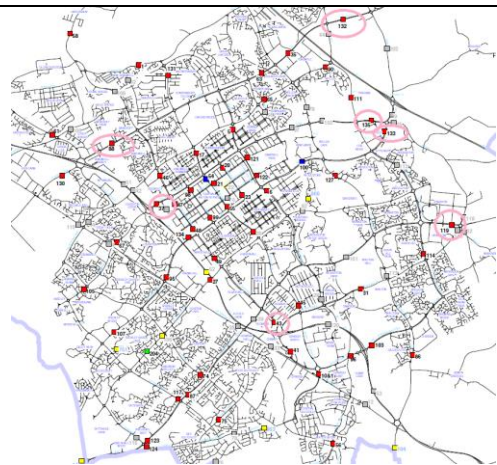
On a more positive note some 65% of survey respondents said they would be likely or very likely to use local buses if services were improved.

¹ Full results can be viewed here: [https://www.milton-keynes.gov.uk/assets/attach/50304/2018-02-26%20MK%20Mobility%20Strategy%20Consultation%20Report%20FINAL%20DRAFT%20V2.2%2020.02.18%20\(2\).pdf](https://www.milton-keynes.gov.uk/assets/attach/50304/2018-02-26%20MK%20Mobility%20Strategy%20Consultation%20Report%20FINAL%20DRAFT%20V2.2%2020.02.18%20(2).pdf)

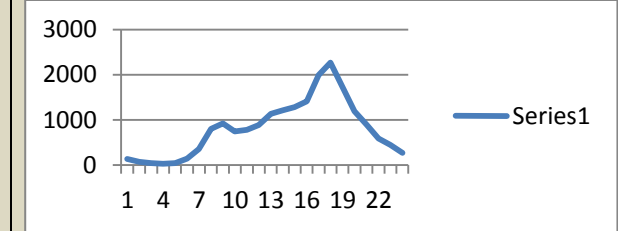
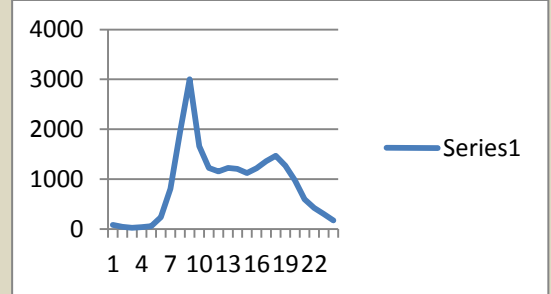
Appendix C: Average Speed and delay on Locally Managed A Roads

Town/City	Average Speed (MPH)			Average Delay (secs per vehicle per mile)		
	2015	2016	2017	2015	2016	2017
Leicester	17.4	17.3	17.2	79.9	80.8	87.5
Coventry	25.6	26.3	25.9	47.8	44.3	46.7
Nottingham	17.0	16.9	16.7	77.1	78.8	83.2
Luton	21.1	20.4	21.2	60.6	65.4	62.2
Northampton						
Milton Keynes	34.5	34.5	34.7	26.7	27.0	27.5
Stevenage						
Peterborough	36.3	37.1	37.3	24.9	24.0	24.9
Oxford						
Cambridge						

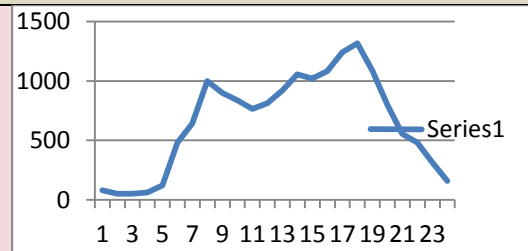
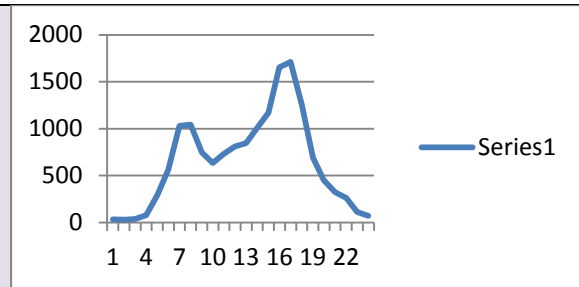
- For the comparator areas where data is available, the average speed on locally managed A Roads in Milton Keynes compares very favourably to other towns/cities. Compared to Leicester, Coventry, Northampton and Nottingham 2017 speeds in Milton Keynes range from 107% to 34% faster. In terms of delay per vehicle in 2017 drivers in Milton Keynes experience around 41-69% less delay than comparable areas.
- Nationally the 12 month rolling average for urban areas for the latest period available (up to Dec 2017) is a speed of 18.4mph.
- Given this current advantage, some decline in average journey speeds on the highway network in MK could be tolerated in future.



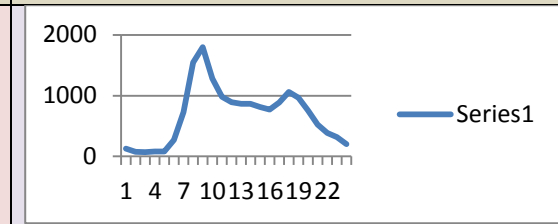
Appendix D: Current highway demand profiles- Graphs illustrate latest available five day (Mon-Fri) average hourly traffic flows at counts sites at various locations on the grid road network (pink circles on adjacent map). Each count site has a two graphs (one for each direction of travel). They illustrate the pronounced peaks in current travel demand.



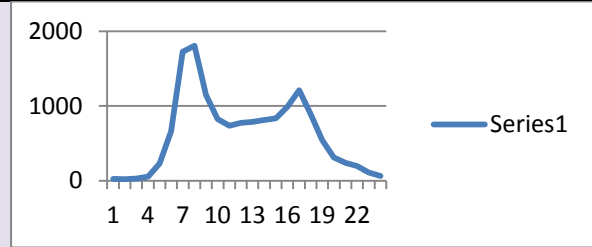
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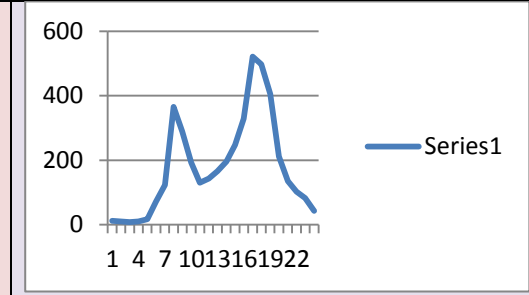
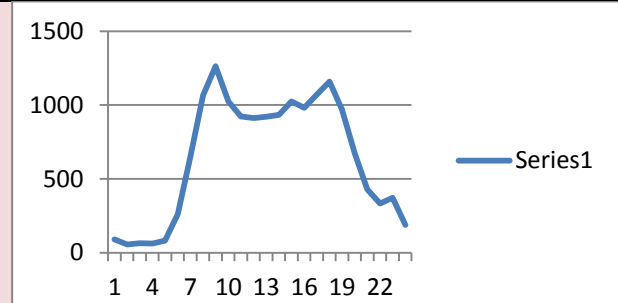
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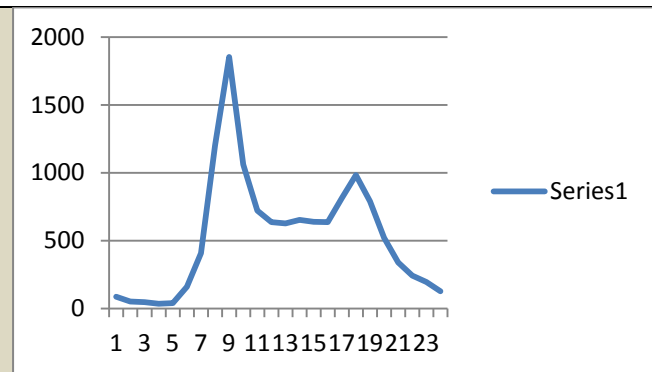


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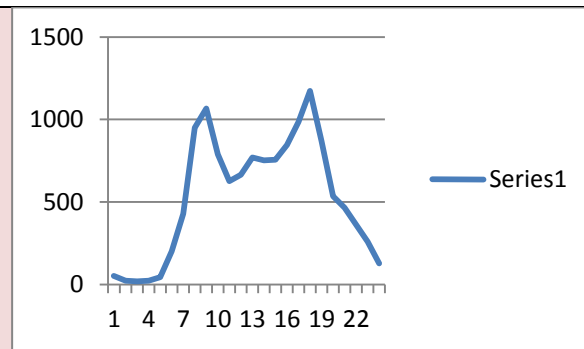


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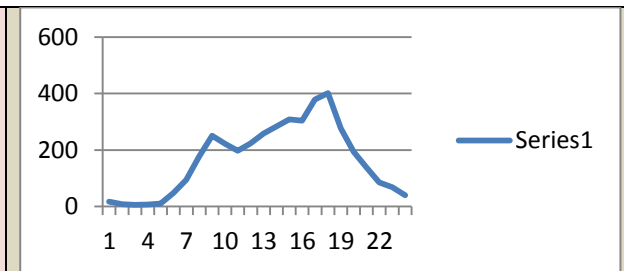




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