

Tseriou Street

Study Report

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Prepared for: Strovolos Municipality





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Contents

8
28
42

Tables

Table 1.1	Differences between design approaches	6
-----------	---------------------------------------	---

Figures

Figure 1.1	The evolution of street design
Figure 2.1	Tseriou Street runs at the centre of a residential community
Figure 2.2	A varied urban form
Figure 2.3	Streetscape 'events'
Figure 2.4	Homes, cafes and shops of all sizes
Figure 2.5	Clusters of shops and cafes attracting higher footfall
Figure 2.6	Conditions for pedestrians are poor
Figure 2.7	Indicative cycling links
Figure 2.8	Capacity of the wider network restricted by key junctions
Figure 2.9	Morning peak congestion central Nicosia
Figure 2.10	Queuing traffic at the Strovolou Intersection, morning peak hour
Figure 2.11	Typical two-way traffic flows over a day (southbound)
Figure 2.12	Typical two-way traffic flows over a day (northbound)
Figure 2.13	Example central reservation in Nicosia
Figure 3.1	Tseriou Street as the focal point for the community
Figure 3.2	Mixed-use street, London as an example for Tseriou Street
Figure 3.3	Design strategy showing a series of "events" to help reduce traffic speeds
Figure 3.4	Examples of possible gateway treatments
Figure 3.5	Typical cross section of a pinch point
Figure 3.6	"Hub" with spacious pavements, trees and more on-street parking
Figure 3.7	A community "hub" around Kosmos bakery – existing
Figure 3.8	Proposed: Making space for people
Figure 3.9	Typical cross section showing parking outside shop fronts
Figure 3.10	Location of off-street car parks

Figure 3.11 Irakleous Street junction – a junction with no priority? .



Drawings

Drawing 18184-01-010

Drawing 18184-01-011

Drawing 18184-01-012

Drawing 18184-01-013

Drawing 18184-01-014

Drawing 18184-01-015

Drawing 18184-01-016



1. Introduction

It has been recognised that the transport system has a huge influence on the character of any city and the experience of living, working and spending time there. Nicosia's streets account for a large part of the city's public space and yet this space is dominated by traffic.

The nature of these places, (roads which are in fact public spaces that belong to us all) define what Nicosia is like as a city. Tseriou street could become the starting point for the re-examination of how Nicosia's streets operate. This re-examination should ultimately (over a number of years) lead to a city that is well connected, has healthy residents and is a good place to do businesses, visit and live.

1.1 The brief

- 1.1.1 Markides Associates have been commissioned by Strovolos Municipality to undertake a study of Tseriou Street. The study brief notes that there has been a lot of work already undertaken on the traffic analysis of the street. The previous studies have been prepared with a strong emphasis on solving the considerable movement, congestion, road safety or link-related issues of Tseriou Street.
- 1.1.2 The brief goes on to say that, further to the previous studies, the aim of this study is to:
 - identify the existing and potential "Place" function of the street;
 - articulate the "Place" requirements, (i.e. related to (pedestrian) movement, crossings);
 - consider environmental (noise, pollution) impacts, parking, services and public realm (space for outdoor seating, shop display, soft landscaping);
 - identify the conflicts between the Link and Place requirements;
 - put forward suggestions for resolving these conflicts where possible;
 - assess the impacts of conflicts which cannot be (fully) resolved
- 1.1.3 The brief further states that it is not within the scope of the study to prepare detailed designs, photo-realistic render, or traffic models of our proposals. Where possible comments should be made on locations/junctions and show what can be achieved through sketches and reference images.

1.2 Streets in context

1.2.1 In the last decade, there has been a rapidly changing emphasis on the distinction between 'streets' and 'roads', particularly in Europe, but also in parts of the USA, Australia and many other countries. There has been a recognition that streets have to fulfil a complex variety of functions in order to meet people's needs as places for living, working and moving around, and this requires a careful and multi-disciplinary approach that balances potential conflicts between different objectives. In contrast, the term "road" is retained for primarily traffic - carrying corridors.



1.2.2 This is part of an 'evolution' in street design and associated land use planning, shown diagrammatically in Figure 1.1.



Figure 1.1 The evolution of street design

- 1.2.3 This 'evolution' has meant that, whereas in the 1970s and 80s roads were designed primarily for traffic, now we design them based on several additional criteria including people's health and well-being; local economies; and public realm. Hence a street would perform the function of a road in carrying traffic but in a much more "tamed" way. In this way the concept of "place" becomes prevalent, giving rise to a sense of community, of pride and regeneration.
- 1.2.4 As described in the 'Manual for Streets' (UK DfT, 2007) In the decades following the Second World War, there was a desire to achieve a clear distinction between two types of highway:
 - distributor roads, designed for movement, where pedestrians were excluded or, at best, marginalised; and
 - access roads, designed to serve buildings, where pedestrians were accommodated.
- 1.2.5 This led to layouts where buildings were set in the space between streets rather than on them, and where movement on foot and by vehicle was segregated, sometimes using decks, bridges or subways, or even central reservations.
- 1.2.6 However, many of these layouts have had significant social problems and are now being revisited, ring roads are being removed, guard-railing is only applied in exceptional circumstances and in other cases traffic dominance is being reduced by slowing vehicles and removing traffic signals.
- 1.2.7 The Manual for Streets also notes that streets that are good quality places achieve a number of positive outcomes, creating a virtuous circle:

Table 1.1



- attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations,
- improving their health while reducing motor traffic, energy use and pollution;
- more people on the streets leads to improved personal security and road safety research shows that the presence of pedestrians on streets causes drivers to travel more slowly;
- people meeting one another on a casual basis strengthens communities and encourages a sense of pride in local environments; and
- people who live in good-quality environments are more likely to have a sense of ownership and a stake in maintaining the quality of their local streets and public spaces.
- To this we would add the view that such streets also have a vital role to perform in encouraging a diverse and sustainable local economy.
- 1.2.8 Well-designed streets thus have a crucial part to play in the delivery of sustainable communities, defined as 'places where people want to live and work, now and in the future'. These concepts are the foundation on which the current design has been developed.

1.3 Differences and inherent conflict between design approaches

1.3.1 Currently Tseriou street is considered in the Nicosia Local Plan as a primary road with its activity being, Category 1 (Commercial) – this creates conflicts between the 'movement' and 'place' functions of the street – some of these conflicts are highlighted in Table 1.1.

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Differences between design approaches

Strategic traffic movement route key aims	Commercial and Community Street key aims	
Improve capacity	Maintain flow at appropriate 'environmental' capacity	
Maximise speed	Match speed to environmental conditions	
Remove conflicts that cause delays	Safe and pleasant to walk along and cross street	
(segregation/right turn bans), parking	Space for outdoor seating, displays etc	
	Safe to stop	
Minimise traffic delays	Reduce traffic dominance and create an attractive environment to increase dwell times and encourage trips with multiple destinations	



Strategic traffic movement route key	Commercial and Community Street key
aims	aims
Potential public transport and cycling priority measures – i.e. bus/cycle lanes	Public transport and cycling encouraged, and priority given where this is needed and possible without compromising other aims. Cycling integrated in wider community

1.3.2 One of our conclusions, discussed in section 2, is that these two concepts are generally incompatible and one needs to take precedence – in our case we recommend that Tseriou street be treated primarily as a commercial and community street.

1.4 Stakeholders and site visit

- 1.4.1 Members of the study team visited the site in May/June 2019, and also met various stakeholders, whose assistance is gratefully acknowledged. They included:
 - The Mayor and staff at Strovolos Municipality
 - The Urban Planning Department
 - The Public Works Department
 - The Police Department
 - Various local business owners/residents

1.5 Report content

- 1.5.1 Following this introduction section,
 - Section 2 describes the review undertaken of the street
 - Section 3 sets out the design vision, objectives and process
 - Section 4 contains our summary and conclusions



2. Street Review

2.1 Context

- 2.1.1 Tseriou Street is one of a number of radial routes that run from the southern bypass (Spyrou Kyprianou) to the centre of Nicosia (see Figure 2.1). Strovolou, Kantaras, Tseriou and Constantinoupoleos converge near the Strovolos Municipality buildings and theatre on Strovolou. Strovolou is the major radial route in the area, with a 'dual carriageway' design.
- 2.1.2 The land to the east and west of Tseriou Street is residential and new homes and neighbourhoods continue to be developed. There are indications that these are increasing the density and the resident population.
- 2.1.3 This context provides some issues and opportunities:
 - Tseriou Street is at present a barrier to movement across it and to/from the adjacent communities, dangerous to cross, traffic dominated; it is desirable to reduce this 'severance' effect.
 - Secondly, the adjacent neighbourhoods provide opportunities for introducing 'Liveable Neighbourhood' concepts. This refers to measures aimed at reducing through traffic on residential streets by closing them to through traffic or introducing traffic-calmed streets. In parallel, such measures could give rise to the enhancement of walking and cycling to local services and amenities in order to support more active travel, particularly as an alternative to short trips currently made by car. Other measures could include new play streets to improve ambience and providing things to do and see and greenspaces (parklets) and 'greening' to improve the amenity of the local streets. The key is reduced traffic dominance and speed as well as the "filtering" of traffic, providing access but making walking and cycling easy and desirable. Barcelona's 'City Blocks' is a similar concept.
- 2.1.4 There is the opportunity to start to develop this concept in the communities alongside Tseriou Street at the same time as the street itself is adapted to reduce severance and encourage local community use. We discuss this in the next chapter.





2.2 Land use and urban realm

- 2.2.1 Tseriou Street is a street with a very diverse character that includes a wide variety of land uses and development forms (see Figure 2.2). Buildings along the street vary from one or two storey family dwellings to four to six storey apartment blocks. The latter usually have commercial uses on the ground floor. Typically, buildings are arranged on plots of generally 20m-25m wide with setbacks of 3 metres or more on all sides (front, side and back of plots).
- 2.2.2 Occasionally, buildings are joined to create longer continuous frontages. The space between buildings on either side of the street is typically just under 20 metres. Together with the generally modest building heights, this makes Tseriou Street feel like a wide, spacious street. Although build form varies considerably along the full length of the street, generally buildings



become bulkier and setbacks greater (with plots combined to create off-street car parks) – towards the southern end of the street. Most plots have one or two vehicle access points, typically on the sides of the plots.

2.2.3 There are also several vacant plots, including a long stretch of undeveloped land around the proposed Nikis junction. We understand this land is proposed for a supermarket development.

Figure 2.2 A varied urban form



- 2.2.4 There are a number of points along the street where the built form is notably different:
 - At the Platonos (near Kosmos bakery) and Constantinoupoleos junctions, where the junction arrangements create triangular block forms;
 - North of the Pythagorou and south of the Minos and Parnassou junctions where the street widens;



- At various points along the route where the front gardens of (generally) older family dwellings have moved forward from the predominant building line and create "green" 'pinch-points', many with mature trees and hedges in the front garden.
- 2.2.5 Although the street is generally straight, there are some subtle curves which foreshorten forward visibility (in particular in combination with the 'pinch-points') these features have been found to help reduce vehicle speeds¹. Different examples are shown in Figure 2.3

Figure 2.3 Streetscape 'events'



2.2.6 Pinch-points, street narrowings and triangular building plots introduce variety and a sense of place. These existing changes or "events" in the urban form, together with existing and future landmark buildings, are opportunities to be used in the street design to create a greater sense of place and help reduce traffic speeds by making the driver more aware of his/her surroundings.

¹ TD 9/93, DfT, Para 1.2



2.2.7 Tseriou Street includes a wide range of uses including small shops, bars and cafes, family dwellings and apartment blocks, community facilities including a hospital, supermarkets and large(r) retail outlets with off-street parking, petrol stations and other commercial uses. (see Figure 2.4)





2.2.8 The shops and other commercial uses, mostly with apartments above, are situated along the full length of the street and regularly interspersed with one and two-storey family homes. As noted above, the scale of the commercial development varies, with some sections of the



street consisting of mostly large "retail shed" type development and other sections of the street including a higher proportion of small shops, bars and coffee shops. We identified three / four areas along Tseriou Street in particular where this "higher density" of small-scale shops is found which feel more like a 'place', as shown in Figure 2.5:

- 1. Around the junction with Platonos, near the 'Kosmos' bakery
- 2. In the vicinity of Parnassou, near the 'Zorbas' bakery
- 3. Around the Carrefour supermarket, opposite the 'Pandora' bakery
- 4. Around the staggered junction with Symis and Kountourioti (less well defined)

Figure 2.5 Clusters of shops and cafes attracting higher footfall





- 2.2.9 We feel there is a real opportunity in the road design to strengthen these places and help them develop into '**hubs'** that will provide a focal point for 'community life', i.e. go for a coffee, meet a friend, spend some leisure time.
- 2.2.10 Overall Tseriou Street gives the impression of a vibrant local economy, with many varied types and sizes of shops and services of all kinds, creating an interesting streetscene, and links between different premises along a street. These depend on passing trade, with consequent demand for parking, but there is also likely to be local use of these facilities and the potential to create much more local demand with a much better street and pedestrian environment.
- 2.2.11 There is a clear contrast between Tseriou Street and a more 'traffic-focused' street such as Strovolou, where there is minimal on-street parking and most business units are large with off- street parking, almost a 'business park' type result, whereas Tseriou is much more like a traditional mixed 'high street'. It is our view that this distinction is important, and indeed that the type of street represented by Tseriou with its much more 'organic' urban form and land use is an important component of a city's urban fabric.

2.3 Pedestrians

- 2.3.1 Conditions for pedestrians along Tseriou Street are very poor- see Figure 2.6. Large sections of the road do not have pavements. Where there are pavements, these are often of poor standard, lacking consistency in alignment, width and levels (height). The carriageway is generally very wide with few pedestrian crossing facilities, those that are there often have faded markings and can get 'lost' amidst moving and parked vehicles. Many side junctions are wide, increasing crossing distances and the speeds of vehicles turning into them.
- 2.3.2 Parked cars often obstruct pedestrians. This includes points where pedestrians would naturally want to cross at side-streets which are consistently blocked by parked cars.
- 2.3.3 There is a lack of street furniture, soft landscaping and consistent use of materials to make the environment look more appealing. There are very few street trees. More street trees would not only make the street more attractive, but also create shade and help to deliver a better micro-climate.
- 2.3.4 Street lighting is reported to be poor, generally on only one side of the road.
- 2.3.5 Although not observed during the site visit, it is understood that in times of heavy rain, flooding further adds to the issues faced by pedestrians.
- 2.3.6 No information was available on pedestrian movement, and observations indicate that this is generally quite low at present, not surprisingly given the lack of good provision along the road and crossings and the dominance of the traffic function. The fact that there have been serious and fatal pedestrian accidents highlights that the street is dangerous for pedestrians, discouraging local walking and encouraging more traffic.





Figure 2.6 Conditions for pedestrians are poor

- 2.3.7 This very poor pedestrian environment is very likely to discourage people from walking even for very short distances such as from the residential areas to the east and west, or even short trips "across the road" between shops. This has several serious negative effects:
 - Loss of trade as people do not undertake 'multi-stop' trips
 - Loss of 'community life' people can only socialise when out on foot.
 - Additional car trips and pollution even for very short trips
 - Bad and potentially dangerous parking behaviour, as people always seek to park in front of the shop
 - Threat to the viability of smaller shops (without on-plot parking) when stricter onstreet parking controls are introduced
 - Unsustainable public transport system as every journey starts and ends with a walk.
- 2.3.8 It is therefore critical to the social, commercial and environmental success of Tseriou Street that the future street design creates a high-quality pedestrian environment. Although it falls



outside the scope of this study, this also applies to the streets and alleyways that link the residential development to the east and west of Tseriou to the main street.

2.4 Cyclists

- 2.4.1 There are no cycling facilities at present, and relatively few cyclists were observed.
- 2.4.2 Provision of segregated cycling facilities is possible but is complicated by the amount of vehicle access required to plots and to on-street loading and parking.
- 2.4.3 Based on the site visits, we suggest that our preferred approach would be to develop strategic cycle routes on parallel routes through the residential communities, which have generally lower traffic volumes and have traffic calming features, and to also provide facilities at key crossing points on Tseriou Street, for example those in close proximity to schools. These cycle crossings and links can be developed at the next design stage, but indicative links are shown in Figure 2.7.





2.4.4 Cycling can still happen on Tseriou Street itself, and it is expected that the reduction in traffic speeds and changed nature of the road should make cycling easier. Provision of cycle parking (particularly at the identified hubs) should be encouraged, and most road crossings should cater for cyclists and pedestrians.

2.5 Parking

- 2.5.1 Parked cars dominate the Tseriou street scene. Parking takes place in various ways:
 - Parallel parking along the full length of street, including street corners;
 - Echelon parking where street widths allow;
 - On a number of vacant plots;
 - To the back of some large stores, accessed via smaller side streets;
 - Next to or in front of larger scale retail development.
- 2.5.1 Many shops on Tseriou in particular in the northern part of the street do not have on plot (surface) car parking. With almost all trips in the city being made by car (and notwithstanding the need to promote sustainable travel), retaining a sufficient supply of car parking would therefore remain a critical factor to the economic success of the shops. Nevertheless, current car parking levels and behaviour does create issues and compromises the comfort and safety of pedestrian and other road users.
- 2.5.2 The proposed street design needs to manage car parking, finding a balance between providing for customers to the shops and creating a safe and pleasant environment for all road users.

2.6 Buses

- 2.6.1 There are relatively few buses using the corridor, the main service being the route 110 which has an hourly frequency. This route travels north /south from P.Lakatamia Aspres Settlement Solomos Square. Another service is the 114, with a route K.Misiaouli/ Tseri Solomos Square, also with a frequency of approximately 1 per hour.
- 2.6.2 Bus stops are either lay-bys or directly on the kerb, and provision of shelters is sporadic.
- 2.6.3 Provision of potential bus priority in the form of a bus lane is likely to present a number of significant practical problems. Each building plot has vehicle access points which would need to use the bus lane for a length of it; and there are likely to be many parking and servicing on-street locations which also need to cross the bus lane for access. Even with very stringent enforcement (which appears very unlikely) it will be very difficult to keep other vehicles out of the bus lane. The only way to reduce this would be to ban access to on-street bays for the hours of operation of the bus lane, but it is not clear whether the economic benefits of the bus lane would be greater than these disbenefits.



2.6.4 We therefore believe that a bus lane on Tseriou street would not be justified at this stage. We recommend that plans should therefore focus on providing bus priority at particularly congested nodes such as the junction with Strovolou.

2.7 Traffic

- 2.7.1 Recent traffic counts from the Planning Department and the PWD, showed that the daily flow is some 19500 21000 vehicles per day in both directions. In terms of historic trends, in 2008, 23,000 vehicles per day were recorded; there was then a general traffic reduction from 2012 to 2014, followed by a gradual increase of traffic between March-April 2015.
- 2.7.2 Some available (two-way) traffic count information is below:
 - 24/11/14 18,146 veh/day
 - 09/02/2015 18,273 veh/day
 - 06/04/2015 20,568 veh/day
- 2.7.3 Various future increases have been mentioned in studies, and the following factors have been assumed to lead to future growth in Tseriou Street traffic:
 - Ongoing development of the city to the north creating a higher demand to travel towards the city centre.
 - Other PWD projects south of Nicosia (e.g Argiroupoleos Ippokratous)
 - Developments on Tseriou street and surrounding area.
 - Introduction of bus lanes and tram on Strovolou avenue, although it is noted that 10-20% of traffic is expected to switch to public transport
- 2.7.4 However, it is not clear on what basis the future flow increases on Tseriou Street have been estimated, as the principle of 'Predict and Provide', particularly on mixed use urban roads, has long been discredited. Instead, current practice is to define the vision of what a place aims to achieve and then try to manage the traffic accordingly.
- 2.7.5 In the case of Tseriou Street, there is one further particular feature that needs to be taken into consideration, as traffic appears to be constrained by pinch-points to the North and South (see Figure 2.8).





Figure 2.8 Capacity of the wider network restricted by key junctions

2.7.6 Looking at the wider picture of traffic congestion in Nicosia in the morning peak hour, Figure 2.9 shows the delays, the red 'marker' is Tseriou Street. It is very clear that roads to the north (particularly Strovolou) are much more heavily congested than Tseriou Street itself, and the traffic has nowhere to go except into more congested areas.





Figure 2.9 Morning peak congestion central Nicosia

Source: Google maps

- 2.7.7 It therefore seems very likely that increasing flows/capacity on Tseriou Street will just increase the queuing at either end, and will provide relatively small gains in overall traffic delay. Leaving aside any traffic impacts of additional volumes on Tseriou Street, there is also the likely detrimental effect of added traffic flows on increasing existing community severance and traffic dominance.
- 2.7.8 We conclude that, even though traffic capacity is important, in the case of Tseriou street (being constrained primarily at the junction with Strovolos Avenue see typical conditions illustrated by Figure 2.10), traffic capacity should NOT be the predominant consideration.





Figure 2.10 Queuing traffic at the Strovolou Intersection, morning peak hour

- 2.7.9 Figure 2.11 and Figure 2.12 show the typical flow profiles over a weekday, Saturday and Sunday (2018 data).
- 2.7.10 The profiles show that northbound the peak flows are between 8am and 9am, although the flows are still quite high through to 6pm; southbound, flows appear to peak between 2pm and 8pm on a weekday. Peak flows on a Saturday are even higher than a weekday.
- 2.7.11 The patterns indicate that the street is well-used throughout the working day, and that there is already some 'spare' capacity in the street, with Saturday peak flows northbound being some 100-150 vehicles per hour higher than the weekday peak. The flows shown are broadly compatible with the peak hour flows of 800-900 vehicles per hour we would expect in a mixed-use urban street.













Typical Journey times and traffic conditions

- 2.7.12 A useful and usually quite accurate source of average journey times is Google maps. This shows that a typical journey time by car from just north of the Spyrou Kyprianou roundabout to just south of Irakleous Street are:
 - Northbound 5 minutes at 7.30am, 4 minutes at midday and 4 min at 4pm
 - Southbound 4 minutes at 7.30am, 5 minutes at midday and 5 minutes at 4pm
- 2.7.13 This is a distance of 1.9km and the slower travel times are about 23 km per hour, the faster 29 km per hour; at midnight the average speeds are approximately 38 km per hour. Of course, these are averages from vehicles using Google data, individual vehicles will be faster or slower. But the data does show that the journey times are relatively short. It is useful to note that walking the same 1.9km would only take about 24 minutes.

2.8 Road safety

- 2.8.1 There is a general speed limit of 50 km/hr on Tseriou Street; this reduces to 30km/h at the southern junction with the ring road.
- 2.8.2 Daytime observations showed that most drivers were either held to the broad speed limit by the general flow/speed of traffic or they were being cautious, particularly where there were parked cars/turning vehicles. Despite this observation, we understand that there are occasional examples of bad driving and speeding. It has also been reported that street lighting is currently inadequate, being located generally only on one side of the street.
- 2.8.3 It is understood that between 01/01/2005 until 31/10/2014, there were 47 accidents along Tseriou Street, including:
 - 2 fatal
 - 16 serious
 - 15 light
 - 14 material damages
- 2.8.4 We have also been advised that from 31/10/2014 until May 2019, there have been 2 more fatal accidents, and we understand these were pedestrians trying to cross the road.
- 2.8.5 No further information has been provided on the nature and type of these accidents, but during discussions the police representative stated that the majority of the fatal accidents in Cyprus are motorcycle accidents, and that Tseriou Street's accident record was regarded as 'average' for this type of road.
- 2.8.6 The Planning Department's presentation provided to us refers to uncontrolled entries onto the road as a serious source of accidents, and that due to the large number of uncontrolled junctions (and parking along the road, especially if it requires a right-turn move), there are many possible collision points. However, without details of the existing accidents and



comparison against roads with similar conditions/volumes, it is difficult to verify these conclusions, and indeed to decide on the best mitigation methods.

- 2.8.7 In our design approach (described in the next chapter) we have therefore focused on two key points that would, by themselves, reduce accidents:
 - (1) Changing the nature of the road and reducing its traffic dominance, providing the environment for drivers to be more cautious.
 - (2) Reducing the speed of the traffic on the road as it has been demonstrated that the risk of a pedestrian fatality reduces from 31% for vehicles travelling at 40mph (65kph) to 7% for vehicles travelling at 30mph (50kph) – representing a safety betterment of 4.5 times (TRL Insight Report INS009, 2011).

Central reservations

2.8.8 One key issue considered in the study is the need for a central reservation – i.e. a narrow raised area in the centre of the road with high kerbs and/ or barrier specifically designed to prevent cars from turning into the lane of oncoming traffic, see example in Figure 2.13.



Figure 2.13 Example central reservation in Nicosia

- 2.8.9 There are clearly some advantages of these features:
 - They are likely to reduce conflicts with traffic turning across other traffic, except at junctions. This is likely to reduce some types of accidents, although more detailed



analysis is needed of this to determine if this feature is the most appropriate mitigation. In our view they are more likely to reduce vehicle/vehicle accidents rather than e.g. pedestrian accidents.

- They can provide a safe crossing point for pedestrians if wide enough, although generally this is discouraged, with formal crossings favoured.
- They can provide room for landscaping if wide enough.
- 2.8.10 But the major reason that has been put forward to us for a central reservation is road safety. There may very well be such safety benefits, and we believe this increase when streets have higher speeds and higher volumes – a motorway is clearly an example of a very safe high volume/speed road with a central reservation. In our view speeds are not very high on Tseriou Street, volumes are medium and we have no detailed information that such conflicts/accidents are a major local issue. Certainly, in our observations and videos, drivers appear cautious and slow when they expect or experience right-turning and parking behaviour.
- 2.8.11 We were also provided with some studies of central reservations by Frederick University (showing no real safety improvement from this feature) and a study by the Police Department claiming safety benefits. In our view these studies are both likely to be correct to some degree, in that in some cases central reservations are likely to have safety benefits, in others not the key issue is to determine the need from the design objectives for a street, its nature and any evidence of safety issues.
- 2.8.12 In our view the focus should be on the serious and fatal accidents, particularly of vulnerable road users, and understanding for the location in question how these accidents arise. We note that accidents can have a number of causation factors, including high speeds, driver attention, reversing into traffic, poor lighting, road alignment and design, visibility and other factors our aim in the design we propose is to improve most of these, with the aim of less accidents overall.
- 2.8.13 We also believe that central reservations of this type and this location have a number of disadvantages:
 - The appearance and impact of them detracts from the urban realm, creating the appearance of a more 'traffic dominant' road, which in turn we believe influences the way that drivers and other road users behave.
 - We believe they generally encourage higher traffic speeds and less caution on the part of drivers (we have no direct evidence of this yet but given the opportunity could design a comparison of speeds on streets with and without these features).
 - Unless specifically designed as a "pavement" with a min. width of 2m (and no physical obstruction), it becomes a barrier to pedestrians. This has consequences for accessibility of shops, bus stops etc. It limits the crossing opportunities for pedestrians, with longer detours for pedestrians to cross the road and limited multiple trips
 - Creation of a poorer trading environment for certain kinds of shops it only really suits large retail developments with off-street parking and limits the way that passing trade can access outlets with on-street facilities only.



- They typically create a poor visual appearance, unless wide and landscaped. If landscaped, maintenance activities become more difficult to manage safely.
- It lengthens some journeys, requiring drivers to turn around at specific locations.
- There is reduced accessibility of residential areas on either side of the main street (i.e. all the small streets are left in and left out only. This is likely to result in detours for local residents and higher traffic flows on parallel residential streets, including those with schools on.
- There are usually 'knock-on' impacts of the design which reinforce this 'traffic dominance' and increases the space needed for vehicles:
 - Wider lanes are needed if single lane only (i.e. to allow for overtaking in case of breakdowns etc)
 - Turning movements are focused on particular junctions, which tend to be signal controlled to cater for more movements;
 - As noted above roundabouts are needed to provide a turning location for vehicles which otherwise would have to travel a long way to turn around.

Why are we looking for an alternative approach?

- 2.8.14 Reducing accidents is a very important aspect of improving the quality of life, but it is important to be very clear about the causes of these accidents and the mitigation options open to reduce these. Furthermore, reducing accidents is not the only aspect of improving quality of life; social, physical and economic well-being is also critical.
- 2.8.15 In this respect we believe that the 'balance' between vehicles and other street users is critical; too much traffic dominance leads to a pedestrian and community 'wasteland', with everything subsumed to the needs of the car.
- 2.8.16 Creating the best possible walking and socialising environment is the foundation of creating a more sustainable transport system every journey involves a walk. No one will use a bus / tram if the walk to the bus stop is inconvenient / unattractive / involves long detours.
- 2.8.17 We also need to consider the trading environment shops and cafes fulfil an important function in the success of a city and its community and the aspiration to support businesses cannot be dismissed as "pampering to traders" (especially as it is zoned for commercial use).
- 2.8.18 Consequently our approach, rather than focussing on a central reservation as the 'cornerstone' of a design seeks to reduce traffic speeds by designing a 'street', not a 'road' and creating the right conditions for "public life" (eating, meeting, socialising) to take place on the street. This has the following benefits:
 - An attractive street for walking in is the foundation for creating a sustainable transport system
 - If our street is successful in creating "a Living Street" this has many benefits to the social, physical and economics of the city
 - Residential neighbourhoods (mostly) retain full access to Tseriou no detours / traffic displacement



- Some but not all parking retained for shops.
- Conditions created to make "park and walk (a couple of minutes)" safe and attractive, reducing the need to move across oncoming traffic to park in front of door
- 2.8.19 In summary, we have not yet seen enough evidence to suggest that a central island is vital on Tseriou Street, and there are many urban realm advantages we can see in not including one; our current proposals therefore only include sections of central island where we believe them to be necessary.

2.9 Utilities

2.9.1 A centrally-located drainage sewer is proposed on Tseriou Street, with similar repositioning of electricity cables and other services. There would appear to be no reason why this cannot continue to be introduced, although we record that consideration be given to situating some services under the new footway rather than in the centre of the street, where they should be more accessible for maintenance needs.

2.10 Future planned changes to the street

- 2.10.1 We are aware of the different plans possibly affecting Tseriou street and these are described below.
- 2.10.2 The team were provided with copies of current proposals by the Planning Department for the street. These included the following features:
 - Two lanes (one in each direction) for moving vehicles, segregated by a continuous central reservation of some 0.5m in width
 - One lane (northbound) for buses and cycles
 - Footways of minimum width of 2-3m
 - The addition of more trees and planting in the central median strip
 - 20 pedestrian crossings 7 signalised junctions and 2 raised junction treatments,
 - 2 roundabouts
 - Some 240 parking bays
 - Provision for disabled users and improvements to highway drainage.
- 2.10.3 We understand there is a longer-term plan to introduce a bus rapid transit/tram on Strovolou; this may encourage some other traffic to use Tseriou Street, although it may also reduce traffic by offering a high quality public transport alternative.
- 2.10.4 We also understand that a large new supermarket is planned near a proposed extension of Nikis Street.



3. Design objectives and principles

3.1 Vision

- 3.1.1 Our vision for Tseriou Street is a thriving 'Community Street' that:
 - provides the focus of the social, commercial and leisure needs of the surrounding community and stimulates local businesses;
 - encourages and sustains local pedestrian/cyclist and public transport around natural centres of activity;
 - provides an adequate level of parking for businesses;
 - facilitates an environmentally acceptable level of through traffic in a safe, low speed way.
- 3.1.2 The mixed-use character and established commercial community on Tseriou Street is an opportunity to develop the street as an attractive destination for the local community (and beyond) to socialise and spend time in, as shown in Figure 3.1. It will support and strengthen the sense of identity and belonging of the developing and expanding community and improve the quality of life for all. Figure 3.2 shows one example of a similar street in London, UK which successfully balances the local environment (facilitating a healthy and thriving community) with through traffic.





29





Figure 3.2 Mixed-use street, London as an example for Tseriou Street

3.2 Design Objectives

- 3.2.1 We have developed a set of design objectives to achieve the vision these are set out below:
 - The street design should focus on complementing and enhancing the existing activities and land uses, and encouraging more local use of the street;
 - Pedestrian use along or across the road in particular should be encouraged, and the 'traffic dominance' over pedestrians reduced;
 - The local economy is important, and a variety of economic activity should be encouraged by making the street environment more attractive and easier to use, particularly on foot; at the same time smaller businesses and those that depend on-street parking should be supported;
 - The creation of 'centres of activity' along the road will help the achievement of the above objectives;
 - The street should have far more trees and landscaping to soften the landscape, make it more pleasant and improve the environment;
 - An aim to reduce vehicle speeds and encourage more caution by motorists- making the street more 'self-enforcing' for slower speeds;
 - Maintain rather than increase vehicle throughput;
 - Reduce accidents, particularly those of vulnerable road users.

3.3 Design concept

3.3.1 An overarching strategy drawing (see Figure 3.3) has been developed identifying:



- **Hubs**: Areas along the street with a higher "density" of small-scale commercial development that have the potential to become focal points of community-life. The designs for these areas would include several of the following elements: changes in the road alignment, raised tables / surface treatments, echelon parking where possible, (additional) tree planting, (additional) pedestrian crossings; street furniture.
- **Gateways / landmarks**: Buildings or public realm features that mark key points along Tseriou Street, including the entrances to the north and south, as well as the junction with Constantinoupoleos;
- **Pinch-points** Places along the street where the street visually and physically narrows (i.e. no on-street parking). We anticipate we would mostly utilise existing pinch-points created by front gardens. Pinch-points would be combined with pedestrian crossings and would seek to slow traffic and create 'interest' in the street.





3.3.2 Figure 3.4 shows examples of 'gateway' features - this could include raised table junctions and the introduction of banners to promote Tseriou Street as "A Living Street".



Figure 3.4Examples of possible gateway treatments



- 3.3.3 Figure 3.5 shows an example of a typical 'pinch-point' and Figure 3.6 shows how a 'hub' with a parking square, tree planting and pavement cafes may be created where the street has sufficient width.
- 3.3.4 These features, alongside more "traditional" road design features including pedestrian crossing points and junctions create a string of "events" at regular intervals along Tseriou Street. As well as helping to create a more appealing and legible pedestrian environment, these serve to make a driver more aware of its surroundings and adjust vehicle speeds accordingly.





Figure 3.5 Typical cross section of a pinch point



Figure 3.6 "Hub" with spacious pavements, trees and more on-street parking



3.3.5 Figure 3.7 shows the existing situation at the Kosmos Bakery area, with a car-dominated street that is difficult to cross. Figure 3.8 shows how the proposals could create a far more 'people-friendly' environment.



Figure 3.7 A community "hub" around Kosmos bakery – existing





Figure 3.8 Proposed: Making space for people

- 3.3.6 A significant consequence of this approach is that the land taken for "carriageway" will be almost half of that required by a more conventional road design. At the same time the land given to pedestrians will be nearly double.
- 3.3.7 The street design then stretches between these "events" and includes the following core design features:
 - Min 2m clear footway on both sides, preferred 3m;
 - Maximise opportunities for tree planting;
 - Min 6.5m carriageway 2 lanes, one in each direction;
 - Maintain parking and loading areas wherever possible, but design-out echelon parking unless it can be 'protected' by an island;
 - No parking on corners;
 - Reduce street corner radii to 4 to 6 metres to facilitate easier pedestrian crossings and slow down turning traffic;
 - Right-turn lanes at significant junctions only;
 - No new signalised junctions, (depends on priority control instead); we believe that signalised junctions will probably introduce more traffic delay and potentially accidents;



- Retention of the 'all priority' junction at Irakleous Street;
- Bus stops on the carriageway rather than lay-bys to reduce bus delays and street space required.
- There are many property accesses along the road; if no parking/loading is created across these there will be a significant reduction in parking; design approach has been to indicate parking /loading but show 'keep clear' markings; this should retain flexibility in use.
- Raised side road entry treatments at hubs to improve crossings for pedestrians
- Cycle parking at hubs.

3.4 Parking for visitors

- 3.4.1 We consider the businesses along the street to provide a vital component in creating "Living Streets" and thus create environmental, social and economically viable sustainable communities. Although in the longer-term future we would like to see less car journeys, at the moment shops rely on a reasonable level of car parking provision much of it ' pass-by' traffic, to run a viable business, and our view is that we need to provide this.
- 3.4.2 Our approach has been that for those shops that have no convenient off-street car parking, we provide on-street parking (but not on corners, not echelon parking unless 'protected' parking, not on driveway access points, and not at the cost of providing at least 2-3m footways and 6.5m running lanes). We estimate that we have provided some 275 parking spaces on-street based on these criteria; there are probably another 50 spaces marked as 'keep clear' over accesses, but that could possibly be used for very short-term stopping or parking or parking by the site owner or their visitors. A typical cross-section is shown in Figure 3.9.





Figure 3.9 Typical cross section showing parking outside shop fronts

3.4.3 Longer-term, we think that more off-street parking would help reduce on-street pressure and may encourage longer duration trips, where people visit multiple shops. Figure 3.10 shows (as far as we can establish at present) where off-street car parking is currently available, together with 100m walking distances. It shows that most of the street is within a 100m (i.e. a couple of minutes) walk of an off-street car park. However, currently walking along Tseriou Street – even for a couple of minutes – is not a pleasant experience which we feel drives the desire of customers to "park in front of the door". A further issue is that these car parks are either informal / illegal use of vacant plots, or private, customer-only car parks next to larger stores / supermarkets.





3.4.4 We think it would be useful for the future of the street to encourage the use of these offstreet spaces for visitors to Tseriou Street. Once the new road scheme is implemented, walking will be a safe and pleasurable experience and a 1-2 minute walk would be a viable option. This longer-term parking strategy could possibly be led by the trading community, together with the Mayor, to develop a solution to formalise the use / availability of off-street



car parking by allowing customers to visit other shops and possibly encouraging continued use of some off-street parking lots – or create additional temporary parking if required. Longer term, this would then give the option to release the space currently given over to on-street car parking to other users, such as additional pedestrian space, cycle lanes etc.

3.4.5 However, there is a balance to be struck. We do not want to encourage more parking overall. Instead we would seek to gradually reduce it over time as people start to travel by more sustainable modes of transport. This requires careful consideration by the relevant authorities.

3.5 Junctions

- 3.5.1 Our proposals do not envisage significant changes at most junctions, as the side roads appear to work relatively well, and we are not aware of any traffic data showing significant congestion or other issues. The introduction of signalised junctions in general does not appear to offer any significant advantages over priority junctions and more pedestrian crossings. We have provided right-turn lanes at some junctions which we believe are likely to cater for more traffic. Should detailed traffic counts be provided we can revisit these conclusions, but in general our view is that many signalised junctions are not compatible with the other design objectives.
- 3.5.2 At the existing signalised junction at Constantinoupoleos, our aim has been to keep the signals but reduce the amount of road space and simplify the pedestrian crossing movement.

Irakleous Street junction

3.5.3 This is an 'all-priority' junction in a 'dog-leg' form, with vehicles giving way to each other in a seemingly 'chaotic' way (see Figure 3.11). However, it seems to work well, with drivers being cautious and generally courteous, and traffic flows well. There is a similar very successful example of such a junction in Poynton², UK which exemplifies how drivers behave in a more cautious and acceptable way, if there is eye contact between them. We, therefore, propose to keep this arrangement, but to slow traffic approaching from the north with a narrowing, to slow all vehicles with a raised table, and to provide pedestrian crossings.

 $^{^{2}\} https://www.sustrans.org.uk/our-services/what-we-do/route-design-and-construction/shared-space-busy-intersection-poynton and the services of the servi$





Figure 3.11 Irakleous Street junction – a junction with no priority?

3.6 Level of design for report

- 3.6.1 It has not been the purpose of this report to produce an engineering design or to consider every detail on Tseriou street. We have visited the street a number of times and used available information on highway boundaries and features. We have not been provided with detailed accident data or traffic flows apart from two junctions and a link count. Our report and preliminary drawings have identified our recommended approach which, if acceptable, would require the consideration of further detail on the study corridor including the production of engineering designs as well as designs for landscaping and the public realm.
- 3.6.2 We also note the city's emerging direction towards sustainable transport. We believe that the current design should therefore be kept under periodic review so that certain features of it (e.g. the need for bus lane or the introduction of further cycle benefits) can be modified/adapted in accordance with emerging circumstances.



4. Conclusion

4.1 A changing design emphasis

- 4.1.1 We understand that Tseriou street has been the subject of several studies as well as debate. This is natural and understandable; it is a key movement corridor that affects the lives of many people (traffic as well as the local community).
- 4.1.2 The approach to street design in many European and North American cities is changing. No longer are streets considered to be just conduits for traffic. Instead, they are seen as vital arteries to local and wider communities because a street (in addition to its function as a carrier of motor vehicles) can contribute to people's health and well-being; to economic regeneration; to the feeling of belonging (a sense of place); to improved public realm; and to safe movement by modes other than the car. In other words, a street is transformed so that it can become a place of quality and of pride to the local community.
- 4.1.3 We have adopted these new principles in formulating our proposals for Tseriou Street. There are still many details to be considered but we believe that if these principles were to be adopted, it would result in the creation of a street that not only accommodates traffic safely but also leads to the social and economic regeneration of the street and its surroundings.