GREATER CAMBRIDGE

Falling back in love with the future

Create Streets's response to the New Towns Taskforce

CREATE
streets

Introduction

On 31 July, 2024, the Government announced its New Towns Taskforce, chaired by Sir Michael Lyons, setting out its ambitions for new towns and urban extensions to help meet its target of 1.5 million new homes over the next five years. Create Streets welcomes this ambition and applauds the bold vision for new towns and urban extensions.

We believe this vision could help the Government solve our housing crisis and create desperately needed new homes and affordable homes sustainably without sprawling all over the countryside, defined by walking and cycling, gentle density and improved public transport.

Critical will be coding and pre-permitting with confidence attractive homes and streets at walkable gentle density and creating new tram lines and train stations around which new neighbourhoods can cluster. Without these we risk slipping back into a slow and expensive 'business as usual' with public subsidy wasted on an endless merry-go-round of consultants' fees and reports.

Inspired by the early announcements and visit to Cambridge by the Task Force, this note seeks to outline a vision for Greater Cambridge, a new city quarter, at two dates in the future: 2050 and 2100.

This vision includes:

1. a phased master plan;
2. an outline approach to public and active transport;
3. an outline approach to the creation of attractive and sustainable homes, offices and laboratory space;
4. summary of a future street and block design code and pattern books for buildings;
5. possible approach to parks, a national park and biodiversity net gain; and
6. possible approach for museums and cultural centres.

Though they can only be indicative, we have included images throughout on what this might look like. Critical in building public support will be a place built to this level of beauty, texture or quality. This is necessary to rebuild very low levels of public trust in the design, planning and development process.

Part of the mission of Greater Cambridge is to overturn these low expectations, proving that Britain can still build cities of which we can be proud and which can drive growth, prosperity, efficiency, agglomeration and spatial serendipity.

There are several reasons to expand Cambridge. It will help solve Britain's chronic lack of homes. It will revive declining living standards for those struggling to afford a home or move to where they wish to work. And it will give Cambridge the laboratory space it needs to retain its international leadership in research, technology and life sciences, with all the immense opportunities that this brings for enterprise and innovation in Britain.

We must overcome low expectations for new development to build cities of which we can be proud.

However, done with love and ambition, and with the high courage that will be required to break 'business as usual', Greater Cambridge can also help the British people to 'fall back in love with the future', showing that new places can be the equal of the old. We can make Greater Cambridge by far the finest urban extension to any city anywhere since 1945, an example that will be emulated all over the world.

Cambridge has a strong built identity to which new development should respond.

Extracts from New Towns Taskforce announcement, 31 July 2024:

Deputy Prime Minister, Angela Rayner said:

"Our new towns will deliver housing fit for the future, shaping new communities with real character that people can be proud to call home.

"With Sir Michael in the driving seat, I know his Taskforce will work together with local people to help us decide on the right places for these new towns, delivering more homes, jobs and green spaces.

"We are getting Britain building again and our long-term vision for a new generation of new towns will enrich the lives of working people in the years to come."

Chancellor of the Exchequer, Rachel Reeves said:

"Getting Britain building is at the heart of our mission to grow the economy and make every part of the country better off.

"Alongside our landmark reforms to the planning system, this programme of new towns will kickstart economic growth and give businesses the confidence to invest."

New towns will also spread opportunities for every walk of life – creating good jobs and delivering the transport links, access to public services like GP surgeries and schools, and high quality green spaces that communities need – which will be part of the New Towns Code. This aligns with the government's new golden rules to ensure development improves existing green spaces and creates new ones.

New Towns Taskforce Chair, Sir Michael Lyons said:

"A new generation of new towns and largescale urban extensions could play a significant role in the government's plans for economic growth as well as offering new homes on an ambitious scale.

"Our mission begins today and we will work closely with local leaders and their communities as well as the wider development and investment sectors to make sure these new towns are built in the right places."

I. Vision: a place to love, live and learn

Our vision for Cambridge is defined by a suite of key aims:

1. *Growing Cambridge organically to the south, west and east, adding new districts that extend the existing urban fabric.* These areas will have between 180,000 and 215,000 homes and affordable homes of gentle density streets and squares, depending on the scale of ambition adopted. We propose three major new neighbourhoods: South Cambridge, West Cambridge and, to the east, Fulbourn.

2. *Rediscovering the age of the train – and the tram. Greater Cambridge must have a world-class system of commuter infrastructure.* The existing railway network can be better used with passing loops and new or reopened stations at Addenbrooke's, Shelford and Fulbourn. And Cambridge needs to have a superb new tram network providing radial and orbital connections for the developing neighbourhoods. We have taken advantage of existing capacity studies to outline such a scheme. This is instead of a model of new housing developments as appendages to expensive and land-hungry distributor roads.

3. *Making it natural and joyful, swift and safe to cycle.* Cambridge should become by far the best city in Britain for cycling, emulating the successes of the Netherlands and Denmark. We propose extending and creating a richly interwoven pattern of tree-lined cycle routes into and around the city, to stations, parks, high streets, laboratories and employment hubs. Relying on bikes more than cars will reduce the number of parked cars which need to be catered for and permit development at gentle not low density. This matters for the economics to work.

4. *Making middles: creating towns not just building houses.* There will be a network of attractive and well-connected new town centres in Fulbourn and in South and West Cambridge, clustered around train and tram stations, high streets, and pre-existing employment centres.

5. *Falling back in love with a prosperous and attractive future.* Too many people believe that new development will be loveless and ugly, lumpish and careless of the landscape. Greater Cambridge needs to change this by creating homes rather than 'units', and neighbourhoods rather than 'estates'. By deploying a attractive and popular pattern book of blocks, streets and house and building types, Greater Cambridge must de-risk development and draw on the construction talents of the widest ever range of local developers, social landlords, self-builders, community land trusts and national developers.

6. *Creating deeply green and resilient neighbourhoods, tree-lined and with a dense web of green squares, village greens and private gardens.* Buildings should be created to last for over 300 years not just 60; neighbourhoods should be designed for the perennial needs of human beings, not the passing fads of technology or fashion.

7. *Growing a new fenland National Park, The Queen Elizabeth II Park.* Cambridge should have one of the finest parks in England, reaching through the new neighbourhoods towards the historic centre. The Park will create wildlife corridors and green routes between a network of new and existing nature reserves (such as Bourne Brook Park), great parks and local allotments.


Fulbourn
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Recent examples of new gentle density in Europe

Brandevoort, Netherlands

TudorPark, Netherlands

Le Plessis-Robinson, Paris

Duinenwater, Belgium

Heulebrug, Belgium

New development alongside the T10 tram route in Paris

New social housing in TudorPark, Netherlands

Le Plessis-Robinson, Paris

Jakriborg, Sweden

Brandevoort, Netherlands

II. Greater Cambridge in 2050

Master plan: homes, affordable homes, offices and laboratory space

We propose growing Cambridge organically to the south, west and east, all within the existing greenbelt and with around 183,000 – 214,000 homes of gentle density streets and squares in around 2,555 hectares. (This could be increased by accelerating before 2050 part of the plans for 2100 – see part III, below). Based on conservative assumptions, it could readily provide space for the equivalent of one or more 'Bostons' of lab space. 'Instead of lab shortages being a key constraint on Cambridge, an abundance of lab space would become one of its key strengths. Cambridge's path would be cleared to becoming the research capital of the world.

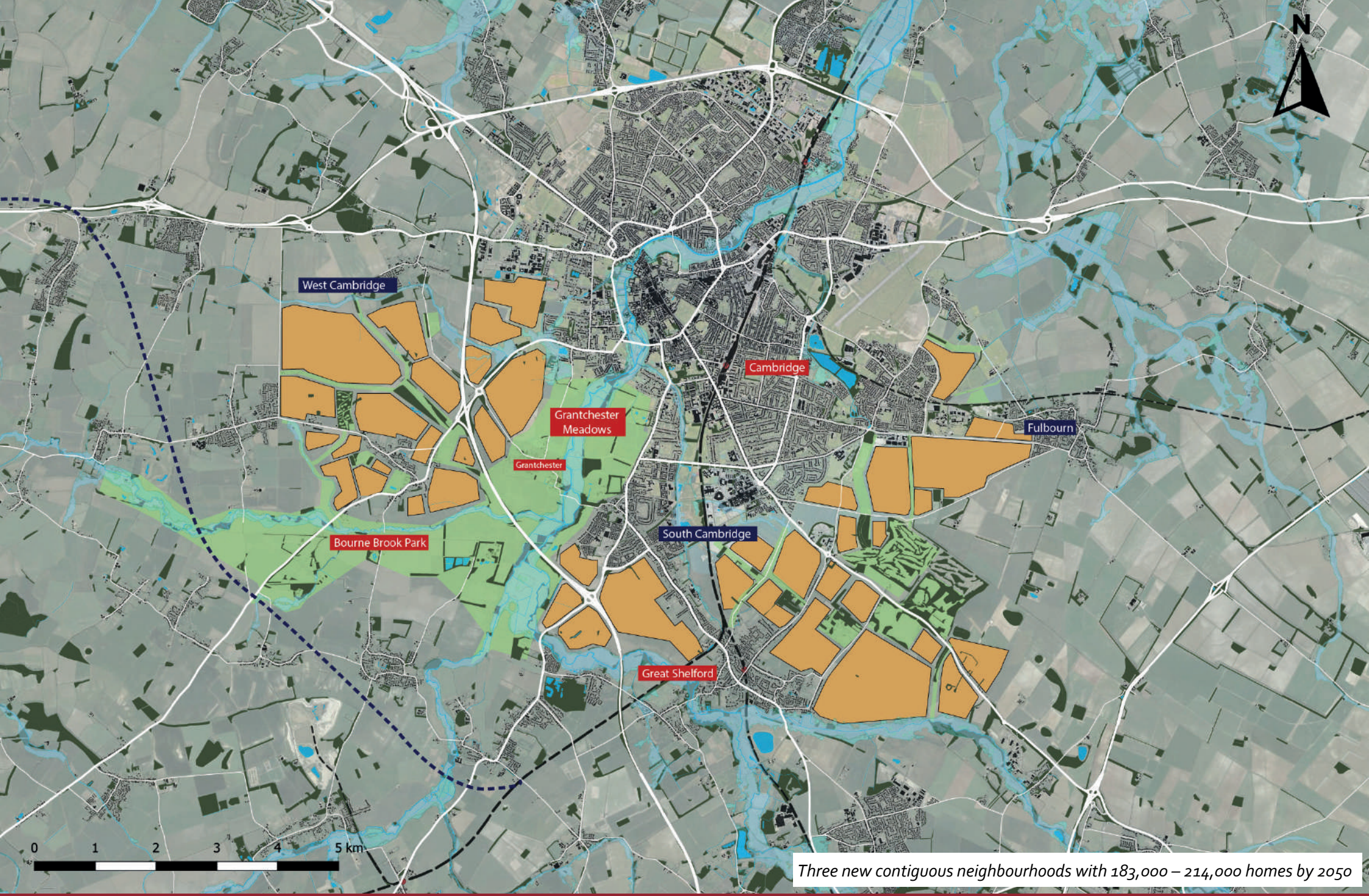
New gentle density development in Greater Cambridge

1. *West Cambridge:* a predominantly residential, neighbourhood of roughly 55,000 to 64,000 homes and over 2.5 million sq ft of laboratory space. West Cambridge will be developed on both sides of the M11 and around the proposed Isaac Newton tram line running west from Cambridge train station and a network of green cycle paths. We suggest cutting and covering a section of the M11 so that the urban fabric of West Cambridge can unfold without a break.

2. *South Cambridge:* a mixed neighbourhood of roughly 66,000 to 77,000 homes and about 2 million sq ft of laboratory space developed around the new and extended stations of Addenbrooke's and Shelford, as well as the other end of the Isaac Newton Tram Line, and a network of green cycle paths. South Cambridge will take advantage of proximity to existing bioscience and digital clusters.

3. *Fulbourn:* a mixed neighbourhood of roughly 62,000 to 72,000 homes and about 2 million sq ft of laboratory space developed around the extended station of Fulbourn and a network of green cycle paths. Fulbourn will take advantage of proximity to existing bioscience and digital clusters.

New greenery and public realm in Greater Cambridge



Three new contiguous neighbourhoods with 183,000 – 214,000 homes by 2050

Master plan: public transport and active and travel

An expanded Cambridge Station with spectacular new train shed

Rediscovering the age of the train and the tram, using existing trains and creating new radial and orbital trams. Greater Cambridge will make use of new, extended or re-opened train stations at Addenbrooke's, Shelford and Fulborne. More crucially still, we propose introducing Britain's finest urban tram network running radially into the city centre, and orbitally through the new neighbourhoods to the west, south and east. This is instead of a model of new housing developments as appendages to expensive and land-hungry distributor roads. Many of our tram proposals take advantage of existing high level plans and capacity studies. Critical initiatives include:

1. *Accelerating and extending existing train network*

a. *Extending capacity at existing Shelford station* to support new homes, laboratories and commercial space in South Cambridge.

b. *Finalising the new South Cambridge (Addenbrooke's) station already underway* to support not just Trumpington but also the new homes, laboratories and commercial space in South Cambridge.

c. *Adding new stations on existing train lines going east at Fulbourn* to support predominantly new homes in Fulbourn. This would replace the previous station closed in 1967 and follows proposals made by Cambridgeshire City Council in 2013.

d. *Double track and electrify the line between Cambridge and Chippenham junction* to increase frequency and capacity of trains and allow through running of East West Rail services to Ipswich. Partial doubling was proposed by Network Rail in 2019. The electrification could be extended to the Great Eastern Mainline at Stowmarket to allow electric trains to run between Cambridge and Ipswich.

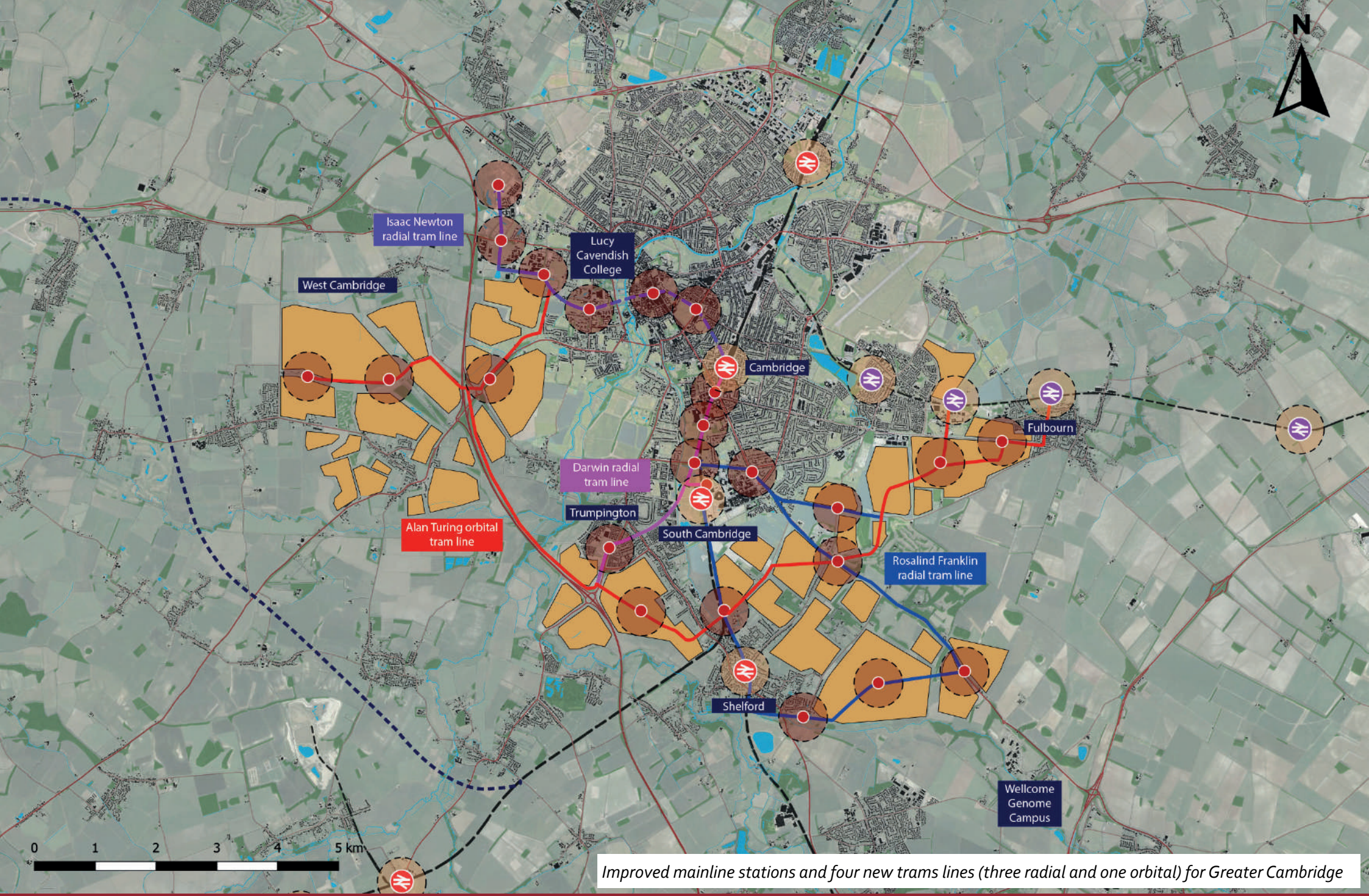
e. *Enlarge Cambridge station and create a loveable world class gateway that is fitting for a world class city* with greater capacity for passengers and trains. Enhance the existing Victorian station architecture with a spectacular new train shed and a new concourse to the east.

f. *Possibly restore the rail link to Huntingdon and St Ives,* enhancing connectivity, capacity, and journey times from settlements to the northwest and making better use of existing infrastructure. The route is currently used by a guided busway and might be converted to either conventional rail or light rail to provide the extra capacity for commuters that greater Cambridge will need.

Cambridge Station's new train concourse

2. *Creating new tram lines:* we propose new radial tram lines, and an orbital tram to the south of the current boundaries of Cambridge, built in several phases. In the new neighbourhoods, trams will normally run along green ways, occupying the two central lanes of tree-lined boulevards akin to those of Belle Époque Paris.

a. *Creating the Isaac Newton radial tram line,* making use of existing plans and running from



Improved mainline stations and four new trams lines (three radial and one orbital) for Greater Cambridge

central Cambridge west to Babbage and then beyond. In time it would intersect with the new orbital tram line.

b. *Creating the planned new Darwin radial tram line,* making use of existing plans and running from central Cambridge south west to Trumpington. This might make use of the existing guided bus route. In time it would intersect with the new orbital tram line and the East-West Rail certainly by 2100, but potentially much sooner.

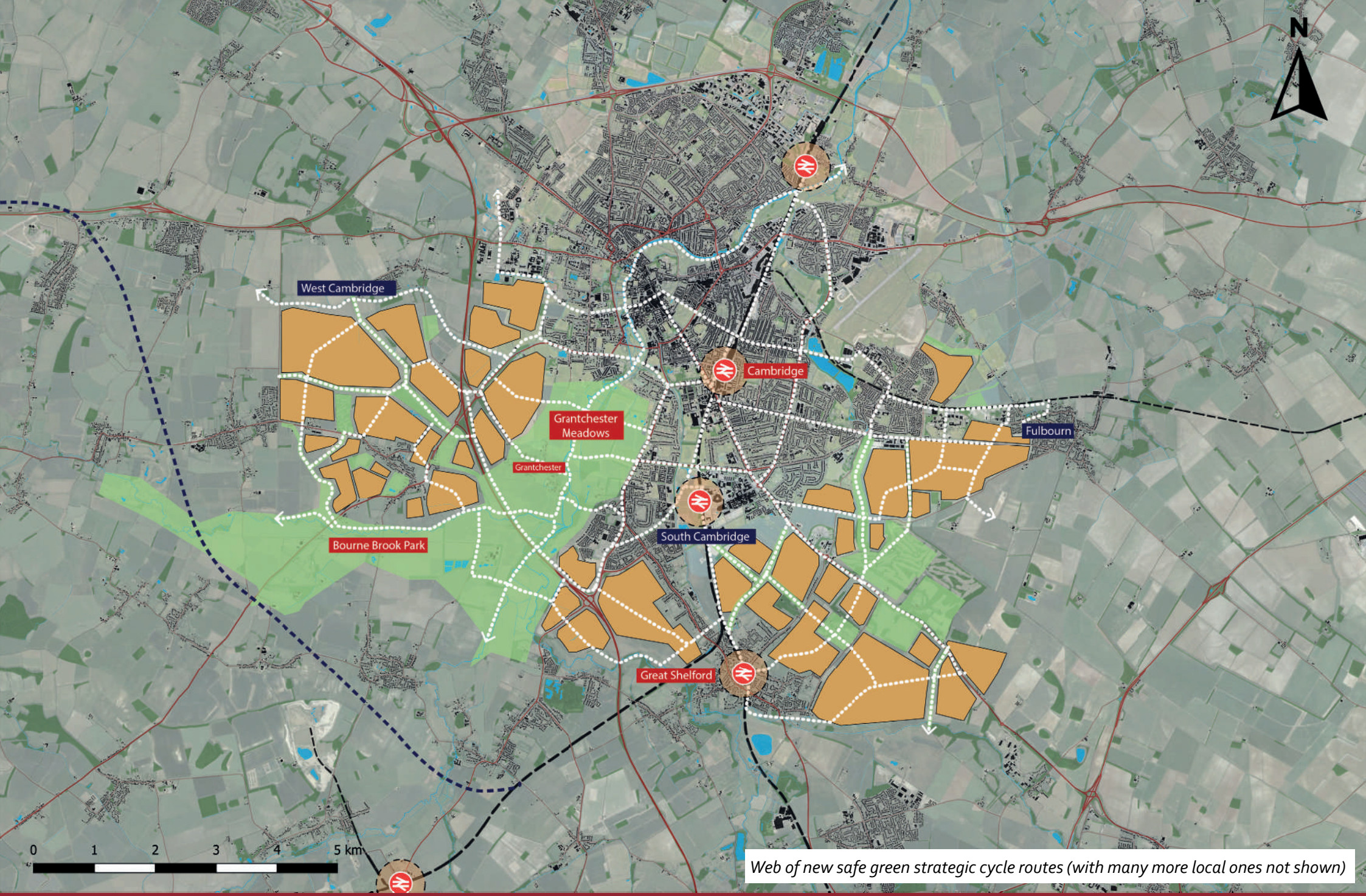
Trams running along green streets and boulevards in Greater Cambridge

c. *Creating a new Rosalind Franklin radial tram line running south east from Cambridge Station toward the Wellcome Genome campus.* This would serve the new homes and laboratories of South Cambridge and the Unity Campus. In time it would intersect with the new orbital tram line.

d. *Creating a new Alan Turing orbital tram line running around the south of Cambridge from Fulbourn via Shelford to Lucy Cavendish.* This would intersect with all three new radial lines.

Trams in tunnels or in streets? One important issue that would need resolution would be the degree to which trams coming towards and into central Cambridge should either (i) use tunnels or (ii) be 'at grade' on existing streets. Both will probably be part of the solution. In the long-term trams 'at grade' on existing streets would be much better for central Cambridge's liveability. As many European cities which have re-introduced trams demonstrate, it is perfectly possible to re-introduce trams. Examples abound. This is also cheaper. However, it may lead to circulation challenges and more local opposition within Cambridge in the short term. Thankfully, tunnelling is also possible in the local clay and has been analysed for the proposed Isaac Newton line. Tunnelling may be the wiser path in the short term though it will add costs and less 'value' to Cambridge in the long term. What is tunnelled and what is possible 'at grade' is a decision for more detailed analysis though some combination of both is likely.

Trams on streets in Orleans and Helsinki. Improving the public realm, public transport and local air quality



Web of new safe green strategic cycle routes (with many more local ones not shown)

Relationship between the tram and M11. In a later phase, one option for the orbital 'Alan Turing' line would be to 'cut and cover' the M11 for a few kilometres into a shallow tunnel and run the tram line over it. This would massively improve the place quality on both sides of the motorway and make it possible for the portion of West Cambridge to the west of the M11 to be much better linked to the east of West Cambridge and to Cambridge itself. Of course, it would also add to the infrastructure cost: we estimate about £250m per kilometre cut and covered.

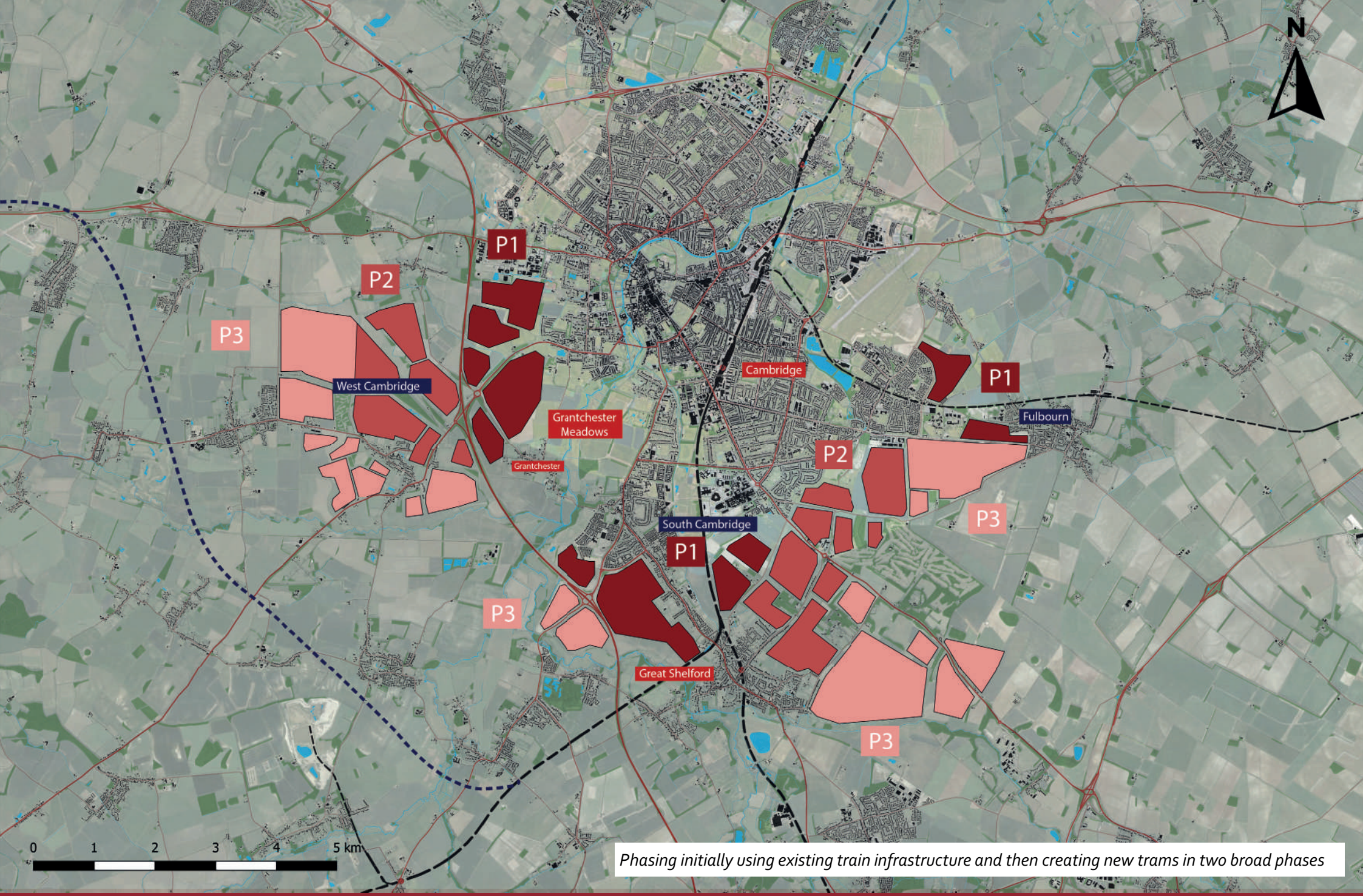
Making it natural and joyful, swift and safe to cycle. Extending and creating a richly interwoven pattern of tree-lined cycle routes into and around the city, to stations and places of pleasure and to existing and new science parks, employment hubs and surrounding countryside and parkland. Cycle routes would be dedicated and segregated along busier streets. A network of dedicated cycle routes would also span east/west and north/south. Where possible they would take advantage of other new infrastructure, for example by accompanying new tram lines. Relying on bikes more than cars will reduce the number of parked cars which need to be catered for and permit development at gentle not low density. This matters for the economics to work.

Escaping from a world of and inefficient and land-hungry world of distributor roads and very low densities. It cannot be overstated just how important the choices made about how we get about Greater Cambridge are to the nature and character of Greater Cambridge. Movement and place are interrelated. By creating more places in which it is easy to get about by bike, foot or public transport as well as by car, we can help create more homes on less land (the gift of 'gentle density') than by the infrastructure-heavy route we are currently taking in most developments. On the same amount of land that was used for greenfield development last year we might have built not 112,240 homes but 220,471 homes if we had developed at an historic 'gentle density' of, say, 55 homes per hectare instead of 28.

Master plan: possible phasing

Greater Cambridge will unfold through phased development, with initial phases largely based on extensions to existing infrastructure, and later phases linked to delivery of new trams.

- *Phase one: let the train take the strain.* Homes and laboratory space in South Cambridge and Fulbourn linked by proximity, streets and cycle routes to stations at Addenbrooke's, Shelford and Fulbourn. Cycle and pedestrian development east of the M11 in 'Inner West Cambridge'. (Approximately 785 hectares).
- *Phase two: it's time for trams.* Predominantly homes in West Cambridge linked by streets and cycle routes to new Isaac Newton and Darwin tram lines. Potentially regenerate social housing estates in Cherry Hinton and Red Cross. (Approximately 760 hectares).
- *Phase three: it's time for more trams.* Homes and laboratory space in South Cambridge, Fulbourn and West Cambridge linked by proximity, streets and cycle routes to 'Rosalind Franklin' and orbital 'Alan Turing' lines. (Approximately 1,010 hectares).



Phasing initially using existing train infrastructure and then creating new trams in two broad phases

Design principles: neighbourhood types

Four main types of neighbourhood. Although there will be many nuances, we envisage four main types of neighbourhood depending on location. The first two of these will be more appropriate in or near town or local centres and around current or future train stations or tram stops. The other two will be more appropriate a little further from sources of employment or movement. All four will fall within the broad category of what is often called 'gentle density' or the 'missing middle', the traditional urban densities falling somewhere between high-rise and car-dependent suburbia.

Critically, we axiomatically do not envisage separately zoned 'employment zones' and 'residential zones' separated by acres of wide and wasteful roundabout and dual carriageways. Unlike nearly all development over the last 70 years, we want true city quarters, in which people can both work and live.

1. Latin quarters

Predominantly offices, laboratories and shops and cafes but some homes and affordable homes as well for those who like to live close to work in the bustle of a town centre.

- *Approximate density:* 25 homes per hectare (mainly offices and laboratories).
- *Cars and parking:* no 'by right' resident parking but some limited underground and car club parking available.

A new Latin Quarter for South Cambridge

2. Marylebone on the Fens:

Cambridgeshire mansion blocks: almost exclusively flats with ground floor shops, restaurants and cafes.

- *Approximate density: 175 homes and affordable homes per hectare (broadly similar to Pimlico).*
- *Cars and parking: no 'by right' resident parking but some limited underground and car club parking available.*

Marylebone on the Fens in South Cambridge

3. Greater Cambridge streets

Predominantly streets of tall, slender-fronted terraced houses, on the model of Golden Age Holland or Georgian Edinburgh, interspersed with small mansion blocks and mews. Modest local high streets.

- *Approximate density:* 70 homes and affordable homes per hectare (broadly similar to Kennington or Edinburgh New Town).
- *Cars and parking:* one car per home on average.

A new terraced street and neighbourhood square in Fulbourn

4. Outer Cambridge

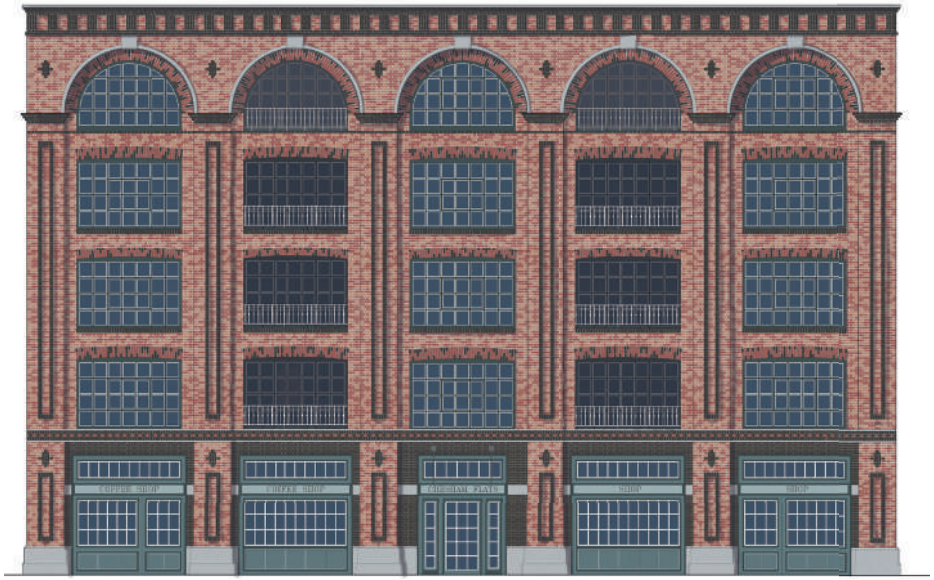
Predominantly streets of wider terraced and semi-detached houses, with longer front and back gardens, and with more local greens. A very few detached houses.

- *Approximate density:* 45 homes per hectare (broadly similar to Clifton or many Victorian inner suburbs).
- *Cars and parking:* one car per home on average.

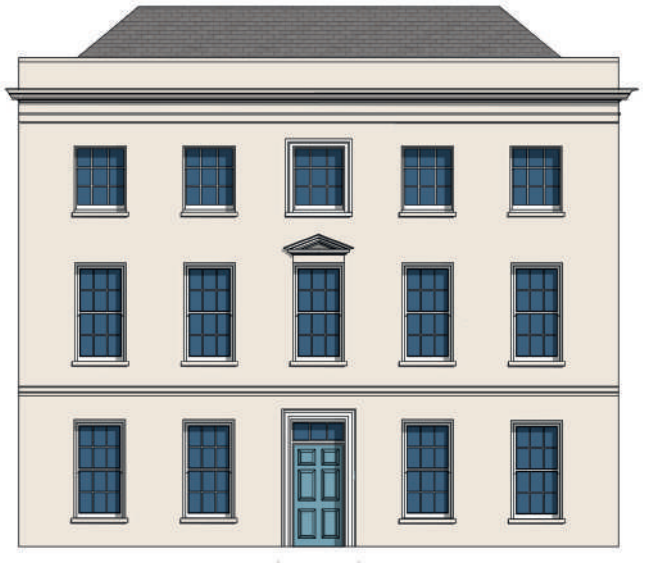
'Making middles': creating towns, not just building houses. Rather than spreading out across Cambridgeshire, like a pancake of boxes, Greater Cambridge should be conceived as an undulating pattern of higher and lower 'gentle densities', of centres and hubs interlaced with quieter local high streets and residential neighbourhoods. It should feature three new town centres (in Fulbourn and in South and West Cambridge) and a network of more local centres, all collectively making use of train and tram stations, pre-existing employment centres and new cycle routes.

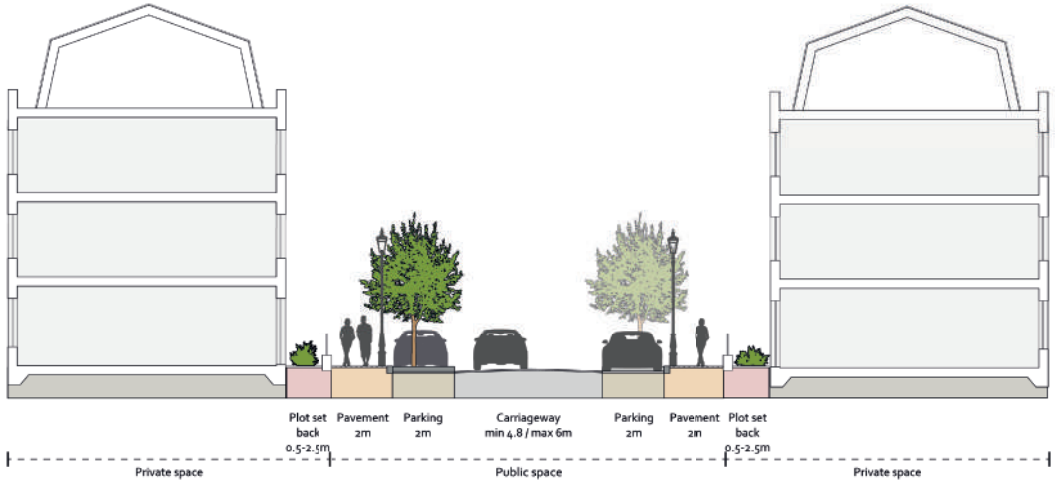
Design principles: street, block and buildings design codes and pattern books

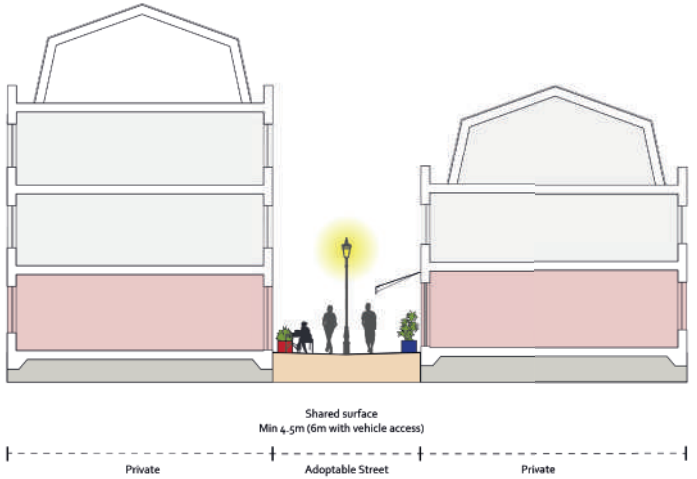
Falling back in love with a prosperous and attractive future. Too many people believe that new development is inevitably dreary and dysfunctional. Greater Cambridge will be governed by a suite of popular design codes, defining a series of attractive and popular types of neighbourhood, and the house and building types that make them up. Below we set out a range of possible street, block, house and mansion block typologies that might be deployed. These will evolve over time and vary by neighbourhood and will be grounded on fundamental and timeless principles: blocks with 'clear fronts and backs', 'continuous street lines' and facades with 'coherent complexity' and 'variety in a pattern.'



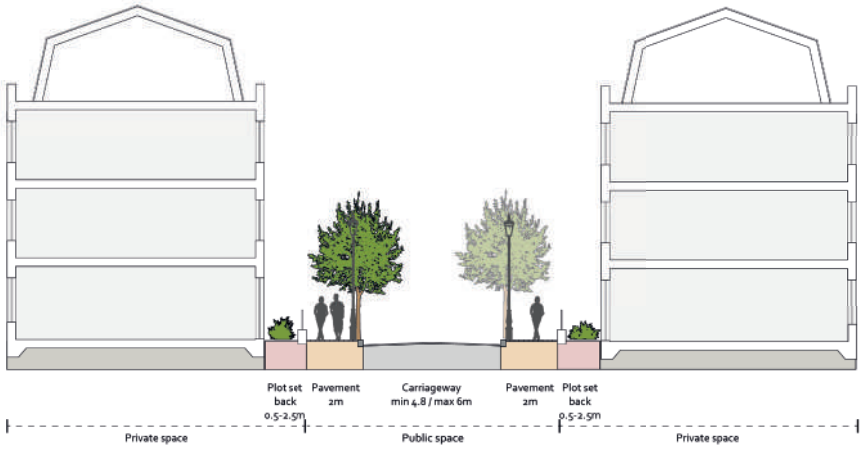
Possible pre-approved house and apartment types for de-risked popular and attractive development

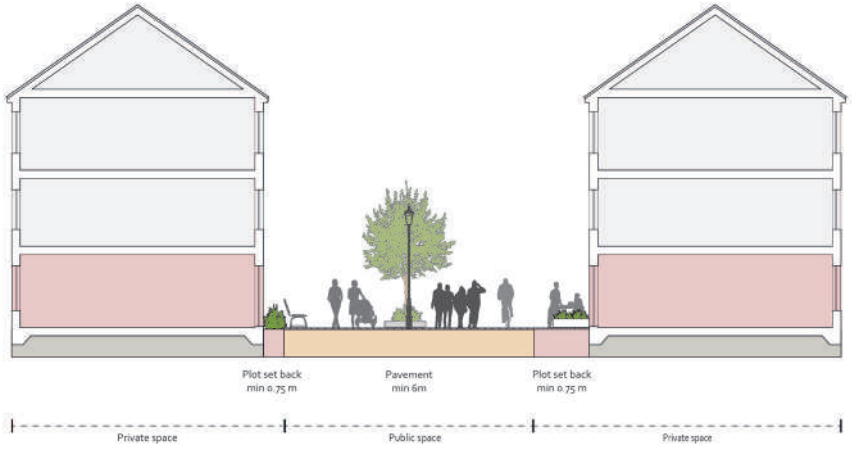






Illustrative sections of a tree-lined local high street and commercial alley





Illustrative sections of a tree-lined residential street and a mews

Design principles: street trees, parks, national park and biodiversity net gain

Creating deeply green and resilient neighbourhoods.
Greater Cambridge will not be the same as any other development in postwar Britain. It won't even be the same as recent 'traditional' or 'new urban' developments such as Poundbury or Nansledan. This will be partly because it will be far bigger with fewer cars and a much greater reliance on trams and trains. But, in everyday life, the most striking difference will be how green and verdant it is. It will be tree-lined with a dense web of green squares, sustainable drainage, village greens and private front and back gardens, making Greater Cambridge's greenery 'little and often'. It will not contradict the traditional blocks and street pattern of an historic settlement but layer the greenery delicately and carefully throughout its varying neighbourhoods.

Green spaces should be 'little and often' with tree-lined streets and green squares between medium rise mansion blocks and terraced homes

Green spaces should be 'little and often' with tree-lined streets and green squares between its medium rise mansion blocks and terraced homes Growing a new fenland National Park, The Queen Elizabeth II Park into the landscape. We envisage The Queen Elizabeth II Park as a generous series of wildlife corridors and green routes stretching from the city centre through existing nature reserves (such as Bourne Brook Park), great parks and generous local allotments. As is already the case, 'green fingers' will stretch from the wider countryside into central Cambridge around cycle routes, footpaths and tram routes. It will be easy, joyful and safe to jump on a bike or tram or walk into the countryside. More formal green space will be bordered by attractive and proud offices, mansion blocks, laboratories or museums.

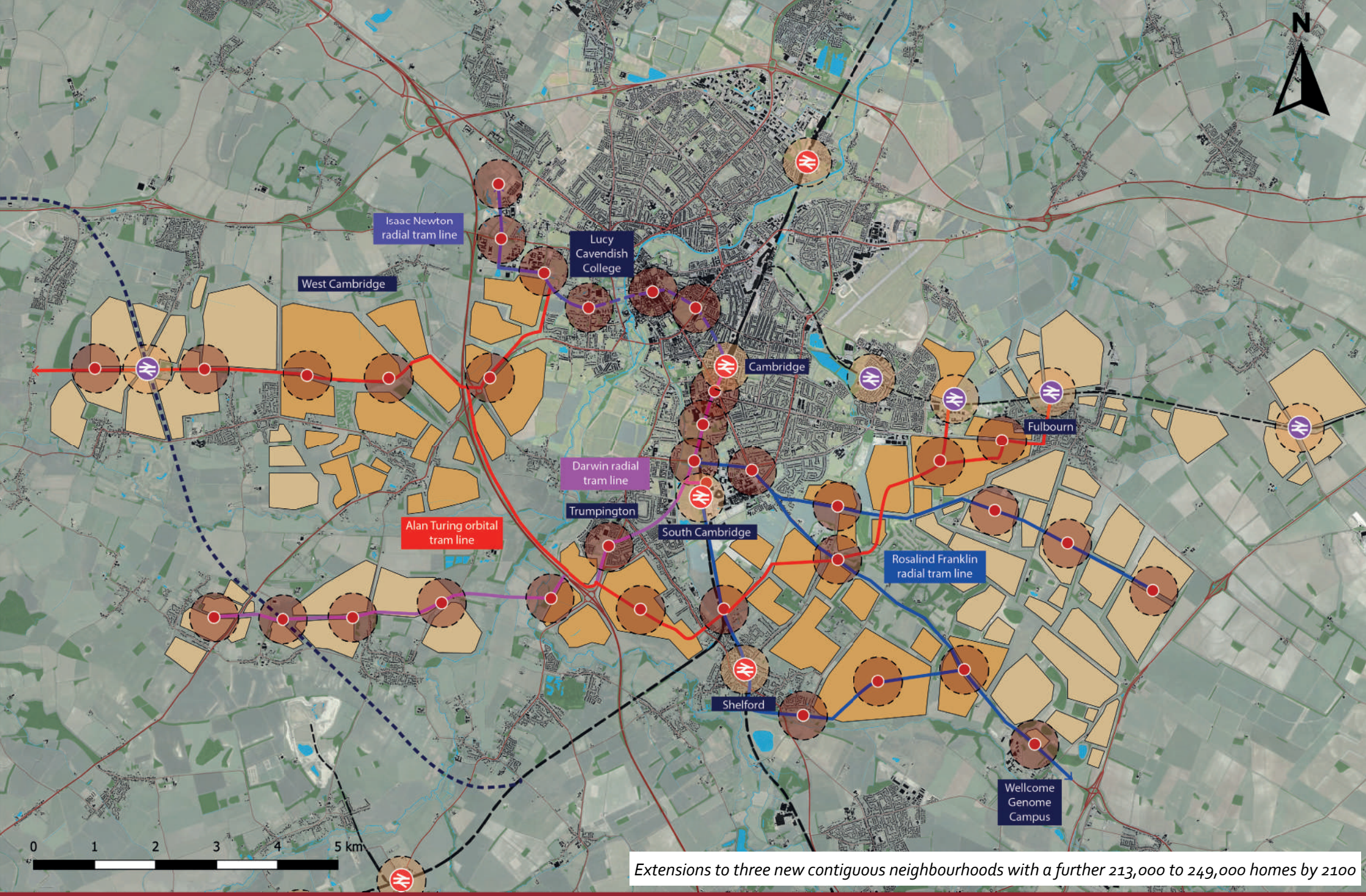
A new natural history museum or world-class concert hall. One of Greater Cambridge's three main new town centres, probably South Cambridge, might act as a wider national cultural hub with one or two new nationally significant museums, theatres or concert halls. Alternatively, laboratory space freed up in central Cambridge might be repurposed to the same end. There is a case for locating museums of national significance in the historic heart of the ancient city as opposed to South Cambridge, nationally important though that will be.

Offices, homes, affordable homes and laboratories overlooking Queen Elizabeth II Park

III. Greater Cambridge in 2100

Over the course of the 50 years from 2050 to 2100 we can imagine how Cambridge might fill in the 'gaps' of its 2050 form and extend further along the lines of existing train lines and future tram lines. This would provide approximately a further 213,000 to 249,000 homes in a further 2,905 hectares. This would take the total size of the extensions to Cambridge to between approximately 397,000 and 463,000 homes. The estimated amount of additional lab space would be greater than by 2050 based on similar assumptions.

Greater Cambridge from the air



Extensions to three new contiguous neighbourhoods with a further 213,000 to 249,000 homes by 2100

IV. Infrastructure: the Metro-land model

The cost of this infrastructure will be considerable. Detailed estimates are of course far beyond the scope of this paper. However, it is useful to benchmark some recent projects.

In 2018, Cambridgeshire and Peterborough Combined Authority commissioned a study on a metro system for Cambridge. The proposed system was much more extensive than the one advanced here. Its central section, comprising 12km of twin bore tunnels and some surface-level provision, came to £2.36bn (around £3bn today).

The cost of overground trams has been widely variable in recent years. A good model is the Edinburgh tram extension, 4.6km at a cost of around £207m, giving a per km cost of £45m. For comparison, the maximalist version of our proposed network would have around 40km, costing approximately £1.8bn.

Tunnelling roads is expensive. In 2014, Highways England estimated that cut-and-covering the 5km A5038 dual carriageway at £620m to £1.3bn. Our proposal to cut-and-cover parts of the M11 could be scaled, but 2km would be a plausible length. Total infrastructure costs would therefore be considerable, certainly in the billions. This raises

Time to re-try the proven Metro-land model?

the question of how such costs can be met. Modern commuter railway systems rarely do much more than cover their costs, and it is highly exceptional for them to cover construction costs purely from future fare income. Tunnelling a road produces no future direct income at all. Time to re-try the proven Metro-land model?

There is a solution. The proposed Cambridge tram system does not only serve the existing city: it makes a huge urban extension possible. This makes it economically fundamentally different to schemes intended to serve a fixed urban area, like the 2018 proposal for Cambridge. Coupled with planning permission, its construction will generate enormous value uplift in the agricultural land it passes through. The Government can tax that value uplift and use it to pay for the tram network, funding infrastructure through the housing it enables.

Versions of this model have been widely used around the world. The most famous British example is 'Metro-land'. First, a subsidiary of the Metropolitan Line bought up agricultural land in the Chiltern Hills. The Line was then extended through the area, and the company developed ultra-desirable commuter suburbs around the stations, like Rickmansworth and Chorleywood. It sold these for a huge profit, making back the great costs of building the railway. Versions of this model were responsible for the 'streetcar

suburbs' of Boston, Philadelphia and Chicago, and it is still in use in Japan today. Although our version is publicly led rather than executed by a private company, we call it a 'Metro-land model' in deference to this celebrated example.

The three new quarters we propose will have between 30 to 50 million square metres of floorspace by 2100. Given conservative estimates for build cost and the value of floorspace in Cambridge, each square metre could easily yield £2,000 profit at today's prices, of which perhaps half could be captured by the Government or development corporation. The development corporation could thus capture several tens of billions of pounds worth of uplift for use on infrastructure and other forms of betterment. The upshot is that the order of magnitude of infrastructure expenditures seem well within the order of magnitude of projected value capture.

CREATE
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Create Streets is a design practice, townbuilder and think tank. We lead research, master-planning, design coding and community co-design to help develop and steward attractive and popular 'gentle density' places which residents and neighbours can love for generations.

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