

Telecommunications Connectivity

Fixed Network and Mobile Coverage Assessment

6 Lindenwood
Chineham Park
Basingstoke
Hampshire
RG24 8QY

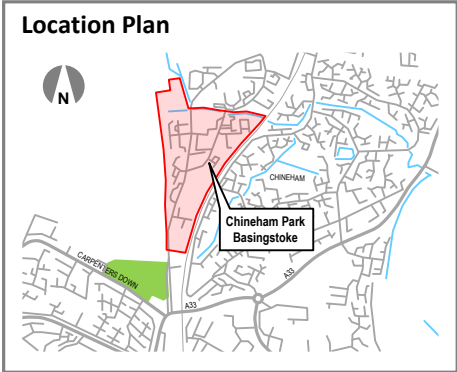


Park Overview

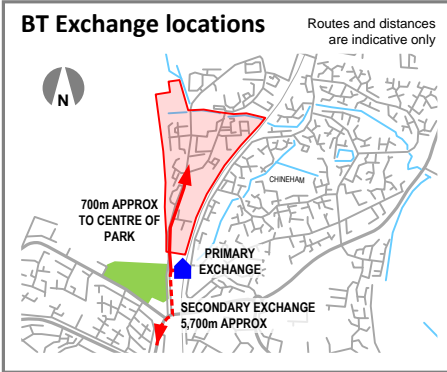
STRUCTURE

Chineham Park is a mature business park to the north of Basingstoke in Hampshire. The park affords multiple office space across numerous buildings for a wide range of uses and includes buildings of varying sizes suitable for small businesses up to large head quarter properties. The park is conveniently located with easy access from the M3 and M4, bounded by the railway to the east. The buildings within the park are well spaced and are predominantly low rise extending typically to two or three floors, with good access via the estate roads and footways.

TOPOGRAPHY



BT Exchange Information	
Primary Exchange (700m approx)	CHINEHAM (THCHN) RG24 8NA
Secondary Exchange (5,700m approx)	BASINGSTOKE (THBZ) RG21 3BX



BT SUMMARY

Chineham Park is located approximately 700m (to the centre) from the BT Chineham Exchange, which is situated to the south of the park entrance. Chineham Exchange provides excellent services including ADSL, ADSL+ and SDSL, plus fibre based business services. On investigation it is considered that this exchange provides all services within the park at this time. Based on the standard copper services, Chineham Exchange can offer broadband speeds of around 7-8Mbps at this time, subject to specific building location. This exchange has yet to be enabled to provide BT Infinity services, and no dates given for future deployment (Data via the BT website). Basingstoke Exchange to the south affords a greater range of services and could provide a level of diversity and resilience across BT business services if required.

TELECOMS CARRIERS

Telecommunications carriers with owned infrastructure located throughout the park are listed below for information. In addition to these, there are a number of alternative carriers that can provide service, albeit over a third party network such as BT. It must be noted that the presence of infrastructure within the search area does not constitute availability of service any specific building location.

British Telecom Tel: 0800 800 152 www.bt.com
Virgin Media Tel: 0845 6000789 www.virginmedia.com
Vodafone Tel: 020 7111 0047 www.vodafone.co.uk
Level 3 Tel: 020 7954 5454 www.level3.com
Easynet Tel: 0845 333 3500 www.easynet.com

SUMMARY

The BT services available at Chineham Exchange, and added resilience of a second exchange afford Chineham Park an excellent level of services to meet today's business needs, with the added advantage of good diversity and resilience opportunities. The physical presence of alternative carriers infrastructure to BT including those from Virgin Media, Vodafone, Level 3 and Easynet on the park and adjacent to the buildings affords an excellent choice of alternative carrier with varying requirements for civil infrastructure based on their existing presence across the park in the carriageway and footways.

RATING	BT / LLU	BT / LLU	CARRIERS
4	4	4	4

BT / LLU Legend:
 1 Limited services available from BT only
 2 Good BT services, limited by LLU Operators
 3 Good BT/LLU services now, or planned
 4 Excellent BT/LLU services now, with diversity

CARRIERS Legend:
 1 Limited infrastructure available / no infrastructure
 2 Adequate level of infrastructure with limited access issues
 3 Good level of infrastructure with limited access issues
 4 Excellent level of infrastructure with no access issues

GLOSSARY OF TERMS

ADSL (Asymmetric Digital Subscriber Line) Asymmetric line speed, the speed from the internet to the user, and the user to the internet are different. Feed over copper cable, governed by distance from exchange to user. (co-exists with voice services)

ADSL+ (Asymmetric Digital Subscriber Line+) Asymmetric line speed as above, but with faster connections both downstream and upstream over similar distance following roll-out of BT's 21CN Wholesale Broadband Connect (WBC).

SDSL (Symmetric Digital Subscriber Line) Symmetric line speed, the speed between the user and the internet are the same in both directions but cannot co-exist with voice services over the same line.

FTTC (Fibre to the Cabinet) Provides fibre to the cabinet, shortening copper cable length requirements to enhance speed

FTTP (Fibre to the Premises) Provides fibre direct to the premises at a lower cost than that of standard lease line products

LLU (Local Loop Unbundling) Is the process by which third party network operators are able to install equipment into BT exchanges in order to deliver their own services without having to utilise BT's network.

BT Infinity (British Telecom) Fibre to the cabinet/premises delivered services from enabled exchanges providing broadband speeds of up to 80Mbps download (subject to conditions) at a lower cost to that of traditional leased fibre services.

STRUCTURE

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TOPOGRAPHY

Location Plan

Cell Site Locations

Information from Ofcom Site Finder at 07.08.2015

Cell Site Information

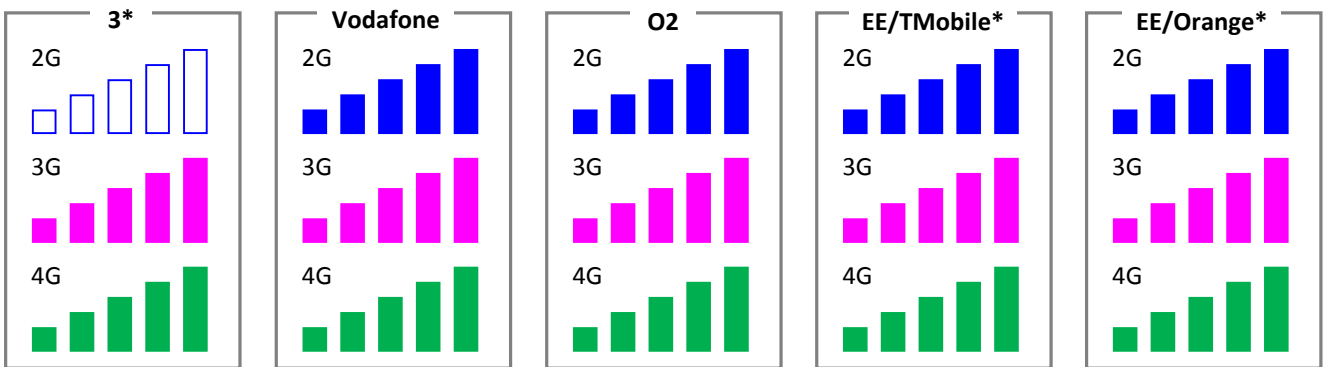
- ▲ Macro site typically >10m above ground level
- Street level micro cells typically <10m above ground level

All locations are approximate only

Operators

1. 3
2. Vodafone
3. O2
4. EE/T-Mobile
5. EE/Orange

STREET LEVEL COVERAGE



OBSERVATIONS

Chineham Park affords an excellent level of macro coverage from all of the four mobile operators for 2G, 3G and 4G services across all network operators. The closest serving cells are detailed in respect of 2G, 3G and 4G services and can be seen vary in location and distance, providing general coverage across the park. Any high concentration of users within specific units may impact on the capacity available especially if this is confined to any one single network operator. Based on this information it is considered to be a location that affords an excellent level of overall coverage across all operators at street level for 2G, 3G and 4G services throughout the park.

COVERAGE KEY - Street Level

- No coverage at this location
- Limited external coverage, indoors unlikely
- External coverage variable with limited indoor capability
- External coverage most areas, variable indoor capability
- Good external coverage, indoor coverage in small buildings
- Excellent external coverage, good indoor coverage in most buildings

PREDICTIONS

Surrounding buildings, the distance and direction of the serving cells and building construction can all impact on the penetration of signal throughout a building. Based on the location and serving cells, it is envisaged that a good/variable level of coverage will be present throughout the park and buildings for 2G, 3G and 4G services. However, we consider there may potentially be some isolated issues on the lower floor areas of the buildings within internal rooms across all operators and technologies subject to building construction. In cases of coverage issues, each of the operators can provide solutions to enhance their service of which we can provide details and assist in their procurement and installation should they be required. Further to the coverage levels, the availability of service is dependant on capacity. This is the volume of data and simultaneous voice calls the macro cell can accommodate at any one time. Capacity issues result in 'network busy' messages or dropped calls. The level of capacity can be addressed by the operators should the building be populated with a high number of users on a single network which will impact on both them and others using the same cell.

INDOOR SUMMARY

OPERATOR	2G	3G	4G
3*	0	4	4
Vodafone	4	4	4
O2	4	4	4
EE/T-Mobile*	4	4	4
EE/Orange*	4	4	4

COVERAGE KEY - Indoor prediction

- 0 No indoor coverage at this location
- 1 Indoor coverage unlikely
- 2 Limited indoor coverage
- 3 Variable coverage in all buildings
- 4 Good coverage to small buildings, variable in larger buildings, built up areas etc
- 5 Good coverage in most buildings and areas

It should be noted that the location, building fabric / materials, surrounding environs impact on the ability of RF penetration and these predictions are for guidance only.

Fixed Telecoms Appraisal Summary

In addition to the Fixed Network carrier study completed, a review by survey of the park was undertaken on the 6th August 2015 accordingly. The purpose of this survey was to clearly identify the presence of existing fixed telecommunications carrier's infrastructure across the park and its presence in location to the buildings.



SITE AERIAL VIEW (Site extent highlighted in red)

Local Carriers

Chineham Park is accessed via Crockford Lane from the A33 to the south of the park. All telecommunications carriers utilise Crockford Lane to provide services onto the park confirmed by the level of infrastructure located in the carriageway and footways along its length. However, a number of services do extend north indicating continued services and opportunities for good diversity and resilience. There were a number of defined clusters of infrastructure across the carriers located along the main estate roads in various locations. Please note a number of chambers are historically marked and/or have since been acquired by other carriers as detailed below.

- BT**
- Virgin Media** (CATV)
- Vodafone** (Mercury, Cable & Wireless, Energis)
- Level 3** (Global Crossing)
- Easynet**

Based on the following locations, it is clear that the main route of all carriers is along Crockford Lane forming rings into building areas around the park with chambers and infrastructure located predominantly in the footways and landscaped verges. The level of infrastructure for BT is the most extensive as one would expect, as this would typically have been installed as part of the main infrastructure providing a minimum of copper services to all buildings, which has since been populated with fibre visible within all accessed buildings, inspected as part of the survey.

The provision of services from both Virgin Media and Vodafone are also extensive with a number of spurs from the main routes serving various buildings. The level of infrastructure identified for Level 3 was not as extensive, but does extend from the park entrance through to Lime Tree Way at this time, affording ease of further extension if required. The level of infrastructure identified for Easynet was minimal and in cases where a single chamber is identified, this can indicate a typical example of duct sharing / agreements between carriers to offer viable service delivery to tenants where required which is more commercially viable than constructing additional infrastructure for a single connection. Typical clusters of infrastructure around the park are detailed in the following **Photographs 1 to 12**.

Fixed Telecoms Appraisal Summary

Chineham Park, Basingstoke, Hampshire RG24 8UT



PHOTOGRAPH 1
BT CHAMBERS IN VERGE AND FOOTWAY ON CROCKFORD LANE (EAST SIDE) OUTSIDE MAPLEWOOD



PHOTOGRAPH 2
VIRGIN MEDIA AND VODAFONE CHAMBERS IN FOOTWAY ON CROCKFORD LANE (EASTSIDE) OUTSIDE MAPLEWOOD



PHOTOGRAPH 3
BT, VIRGIN MEDIA AND VODAFONE CHAMBERS IN FOOTWAY ON CROCKFORD LANE (WEST SIDE) OUTSIDE PINEWOOD



PHOTOGRAPH 4
EXISTING BT AND VIRGIN MEDIA CHAMBERS AND CABINETS AT JUNCTION OF CROCKFORD LANE WITH LIME TREE WAY



PHOTOGRAPH 5
EXISTING EASYNET AND VODAFONE CHAMBERS AT JUNCTION OF CROCKFORD LANE WITH LIME TREE WAY



PHOTOGRAPH 6
EXISTING VODAFONE CHAMBER AT JUNCTION OF CROCKFORD LANE WITH LIME TREE WAY



PHOTOGRAPH 7
EXISTING VODAFONE CHAMBERS ON CROCKFORD LANE AT JUNCTION WITH REDWOOD ACCESS ROAD



PHOTOGRAPH 8
EXISTING VODAFONE CHAMBER ON CROCKFORD LANE AT JUNCTION WITH REDWOOD ACCESS ROAD



PHOTOGRAPH 9
EXISTING BT AND VIRGIN MEDIA CHAMBERS ON CROCKFORD LANE AT JUNCTION WITH REDWOOD ACCESS ROAD



PHOTOGRAPH 10
EXISTING VIRGIN MEDIA CHAMBERS IN FOOTWAY ON LIME TREE WAY AT JUNCTION WITH STAG OAK CLOSE



PHOTOGRAPH 11
EXISTING BT, VIRGIN MEDIA AND VODAFONE CHAMBERS ON LIME TREE WAY OPPOSITE JUNCTION WITH STAG OAK CLOSE



PHOTOGRAPH 12
EXISTING BT AND VIRGIN MEDIA CHAMBERS ON LIME TREE WAY ADJACENT JUNCTION WITH STAG OAK CLOSE

Service Availability

The standard services afforded by BT over its existing copper networks provides a level of broadband services with speeds expected in the region of 7-8Mbps across the park subject to specific location (Data obtained via the BT website). However, the current level of business tariff services available from BT will provide an excellent level of service at this time. Furthermore, there are a host of companies that can provide enhanced products over the existing infrastructure providing smaller businesses a more affordable level of service if so required. The presence of Virgin Media, Vodafone, Level 3 and Easynet on the park and adjacent to the buildings affords any incoming tenant a good choice of carrier albeit with varying level of external works required to provide services, subject to any wayleaves and/or third party agreements.

Summary

Based on the local carrier infrastructure and the availability of services from BT's local exchange, we consider Chineham Park has an excellent level of connectivity with the ability to enhance this by means of additional fibre services where required in minimal timescales from order. The presence of the additional carriers affords an excellent alternative provision of service and diversity at this time albeit subject to rights of access requirements.

6 Lindenwood

Fixed Telecoms Appraisal Summary

6 Lindenwood, Chineham Park, Basingstoke, Hampshire RG24 8QY

STRUCTURE

6 Lindenwood is a mid terraced office building located to the north of the park accessed from Crockford Lane. The building is over two floors, and currently affords Grade A office accommodation over open floor plates with raised floors and suspended ceilings. The building is of typical steel frame and concrete floor construction with glazed and brick facades to all external elevations. The building sits within an environment of other similar commercial properties of varying sizes and heights with good separation between adjacent buildings.

TOPOGRAPHY

Location Plan

BT Exchange locations

Routes and distances are indicative only

BT Exchange Information

Primary Exchange (8000m approx)	CHINEHAM (THCHN) RG24 8NA
Secondary Exchange (5,800m approx)	BASINGSTOKE (THBZ) RG21 3BX

BT SUMMARY

6 Lindenwood is located approximately 800m from the BT Chineham Exchange, which is situated to the south of the park entrance. Chineham Exchange provides excellent services including ADSL, ADSL+ and SDSL, plus fibre based business services. On investigation it is considered that this exchange provides all services within the park at this time. Based on the standard copper services, Chineham Exchange can offer broadband speeds of around 7-8Mbps at this time. This exchange has yet to be enabled to provide BT Infinity services, and no dates given for future deployment (Data via the BT website). Basingstoke Exchange to the south affords a greater range of services and could provide a level of diversity and resilience across BT business services if required.

TELECOMS CARRIERS

Telecommunications carriers with owned infrastructure located adjacent the building are listed below for information. In addition to these, there are a number of alternative carriers that can provide service, albeit over a third party network such as BT. It must be noted that the presence of infrastructure within the search area does not constitute availability of service any specific building location.

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The BT services available at Chineham Exchange, and added resilience of a second exchange affords 6 Lindenwood an excellent level of services to meet today's business needs, with the added advantage of good diversity and resilience opportunities. The physical presence of alternative carriers infrastructure to BT including those from Virgin Media, Vodafone, Level 3 and Easynet on the park and adjacent to the buildings affords an excellent choice of alternative carrier with varying requirements for civil infrastructure based on their existing presence across the park in the carriageway and footways.

RATING	BT / LLU	BT / LLU	CARRIERS
	4	1 Limited services available from BT only	1 Limited infrastructure available / no infrastructure
	4	2 Good BT services, limited by LLU Operators	2 Adequate level of infrastructure with limited access issues
	4	3 Good BT/LLU services now, or planned	3 Good level of infrastructure with limited access issues
	4	4 Excellent BT/LLU services now, with diversity	4 Excellent level of infrastructure with no access issues

GLOSSARY OF TERMS

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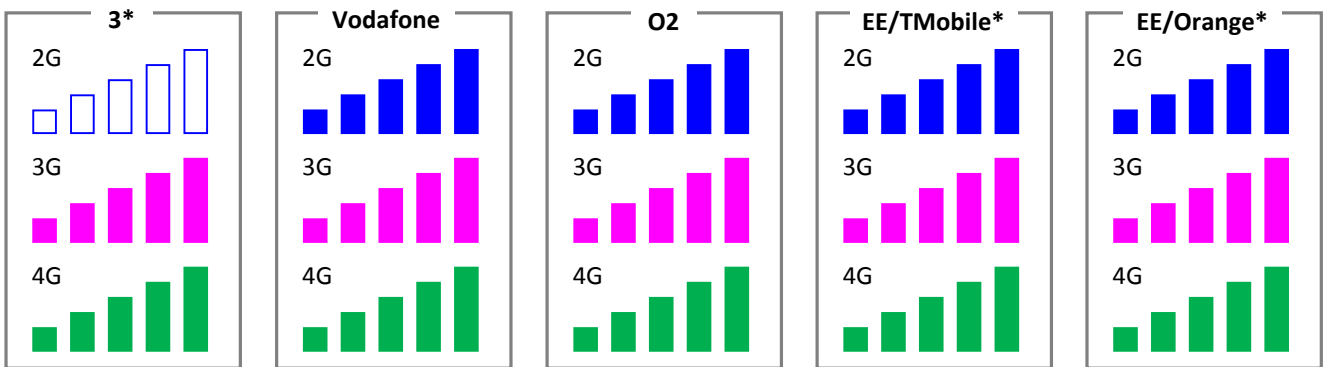
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All locations are approximate only

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2. Vodafone
3. O2
4. EE/T-Mobile
5. EE/Orange

STREET LEVEL COVERAGE



OBSERVATIONS

6 Lindenwood affords an excellent level of macro coverage from all of the four mobile operators for 2G, 3G and 4G services across all network operators. The closest serving cells are detailed in respect of 2G, 3G and 4G services and can be seen vary in location and distance, providing general coverage across the park. Any high concentration of users within specific units may impact on the capacity available especially if this is confined to any one single network operator. Based on this information it is considered to be a location that affords an excellent level of overall coverage across all operators at street level for 2G, 3G and 4G services throughout the park.

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In addition to the Fixed Network carrier study completed, a review by survey of the building was undertaken on the 6th May 2015 accordingly. The purpose of this survey was to clearly identify the presence of existing fixed telecommunications carrier's infrastructure in the building, adjacent or within the local environs.



SITE AERIAL VIEW (Building extent highlighted in red)



ACCESS INTO ESTATE FROM CROCKFORD LANE



LOOKING WEST ALONG ACCESS TO ESTATE

Carrier Infrastructure

Further to the general park report, a number of chambers were highlighted adjacent to the building in the footways and access road from Crockford Lane (See **Photograph 1, 2 and 3**). These are owned by BT, Vodafone and Virgin Media with further chambers from other carriers located in the surrounding environs. Typically these are part of the main duct infrastructure routes for all carriers around the park along Crockford Lane.



PHOTOGRAPH 1
EXISTING BT AND VODAFONE CHAMBERS ADJACENT
LINDENWOOD IN CROCKFORD LANE



PHOTOGRAPH 2
EXISTING BT AND VODAFONE CHAMBERS IN PLANTED
AREA ADJACENT TO 1 LINDENWOOD



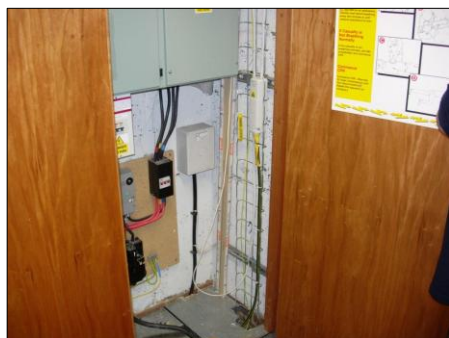
PHOTOGRAPH 3
EXISTING BT AND VODAFONE CHAMBERS IN PLANTED
AREAS OUTSIDE 3 / 4 LINDENWOOD

This level of infrastructure from BT, Vodafone and Virgin Media in this location is good with Vodafone chambers located adjacent to the buildings in a number of locations. Further carriers infrastructure was not identified leading into the building at the time of survey from their location in the footways and carriageways of the main estate roads. Additional services could be provided into the building, typically from the south elevation for ease of construction with a degree of infrastructure extension being required across all carriers.

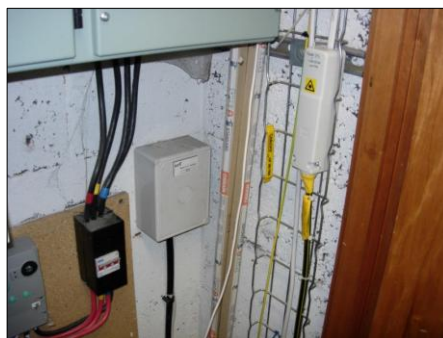
Building Presence

The point of telecommunications intake to the building is located on the ground floor in the existing riser cupboard. The point of intake is within the floor slab and consists of a single duct entry approximately 100mm in diameter. Based on the level of cables within the duct, we consider there is space additional cables from the external network if required.

The level of BT services currently extend to two cables, one providing copper and one providing fibre. The copper services extend to approximately 50 pairs based on size and are terminated in a main distribution point (DP) DP50 . A number of small outgoing cables are present running up the wall of the riser into the ceiling void. The fibre consists of a single cable containing multiple fibres terminated in a gas seal joint on the wall existing basket containment. There is currently outgoing services extending from the joint via Blown Fibre Tubes (BFT's) up the riser at this time providing service to the building.



PHOTOGRAPH 4
EXISTING BT COPPER AND FIBRE DUCTS AND APPARATUS
LOCATION ON GROUND FLOOR IN RISER



PHOTOGRAPH 5
EXISTING BT COPPER SERVICES ABOVE INTAKE
DUCT ON WALL IN RISER



PHOTOGRAPH 6
EXISTING BT INTAKE LOCATION BENEATH FLOOR
IN RISER CUPBOARD, ASSUMED ONE DUCT

Service Availability

The standard services afforded by BT over its existing copper networks provides a level of broadband services with speeds expected in the region of 7-8Mbps (Data obtained via the BT website). However, the current level of business tariff services available from BT will provide an excellent level of service at this time. Furthermore, there are a host of companies that can provide enhanced products over the existing infrastructure providing smaller businesses a more affordable level of service if so required. The presence of Virgin Media, Vodafone, Level 3 and Easynet in the local environs affords any incoming tenant a choice of carrier albeit with varying level of external works required to provide services, subject to any wayleaves and/or third party agreements in respect of those other than BT.

Summary

Based on the local carrier infrastructure and the availability of services from BT's local exchange, we consider 6 Lindenwood has an excellent level of connectivity with the ability to enhance this by means of additional fibre services where required in minimal timescales from order. The presence of the additional carriers affords an excellent alternative provision of service and diversity at this time albeit subject to rights of access requirements and civil infrastructure requirements.