

# Appendix C

## SFRA GIS Dataset Descriptions

### Source Data Discussion

Many datasets were requested for use in this SFRA, and these were primarily received from the Isle of Wight Council and the Environment Agency. These geographic data had various formats by which they were made available and originated from different sources (e.g. digitised paper maps, survey data and satellite data).

The following is a short description of the source data GIS data used during the course of the SFRA. Where available, the reference scale of the map has been included in order to indicate the maximum scale of use for which the map was intended.

### Ordnance Survey Basemap

A high level topographic map which provides an overview of the Island and the RDA's was used as a basemap where detailed ordnance information was not required. This map includes data such as the road network, green areas and contours. The data of this map was captured at 1:50,000 reference scale.

### Mastermap

Mastermap data was made available by the IoW Council. This dataset is an accurate source of ordnance survey data that informed the SFRA at RDA and site specific scale. The reference scale of the dataset differs depending on the degree of urbanisation, with urban areas having a capture standard of 1:1,250 while for rural areas detail is reduced.

### Potential Development Sites

Potential development sites were supplied the IoW Council and included several different datasets of 'Sites', 'Large Sites' and 'Employment Sites'. This dataset identified those areas on the Island that were/might be considered for development. The reference scale of this dataset is unknown.

### Geology

Geological maps of the Island were sourced from the British Geological Society (BGS) on behalf of the Council. The datasets included solid (bedrock), drift (superficial), artificial geological maps, as well as linear geological features and areas of mass movement. The reference scale of these maps are 1:63,360.

### Soils

Soils data for the Island was sourced from a national gridded dataset of soils. This dataset is comprised of 1km<sup>2</sup> cells with attributed values for the percentage composition of various soils for the cell of interest. The dataset also contains a HOST value for the soils in the cell. Given that the data originated in a 1km<sup>2</sup> grid, specific detail about the spatial distribution of soils was lacking

### Groundwater Vulnerability

A digital dataset of groundwater mapping was provided by the Environment Agency. These maps show the vulnerability of groundwater as a combination of aquifer type and soils. The reference scale for this dataset is 1:100,000. Since soils data are included in the dataset, it was possible to supplement the less accurate national soils grid.

### Source Protection Zones

Source Protection Zones were provided by the Agency for the Isle of Wight. The zones show the risk of contamination from activities that might cause pollution to aquifers used for public water supply. The closer the potential contamination activity is to the abstraction point, the greater the risk classification. The reference scale of this dataset is unknown.

### Environment Agency Main Rivers

The main rivers on the Island were sourced from an Environment Agency dataset of rivers defined as larger streams and rivers, including smaller watercourses of local significance.

### Fluvial and Tidal Flood Outlines for Zones 2 and 3

The Environment Agency provided a digital dataset of the Island which outlined those areas affected by flooding. The data was divided according to flood zone 2 and 3, as well as fluvial and tidal. This data is sourced from modelling done for the Agency which used Synthetic Aperture Radar (SAR) elevation data.

### Environment Agency Flood Model Outlines

The Environment Agency provided flood model outlines of various return periods for some of the rivers on the Island, including the Medina, Monkton Mead and Western Yar. This data was used where necessary, to update the fluvial flood outlines provided by the Agency. The accuracy of the datasets is dependant on the modelling process and its input data.

### Historic Flood Outlines

Historic flood outlines were also provided by the Agency. The past flooding events included the years 1974, 1993, 1999 and 2000. The annual exceedence probability of the flood outlines is unknown, and as such, they were used to supplement the existing flood outlines. The reference scale of these outlines is unknown and is dependent on the accuracy of the original data and the scale at which they were digitised.

### Flood Defences

The National Flood and Coastal Defence Database from the Agency was the source for the location, extent and level of protection of flood defences on the Island. The reference scale of this dataset is unknown.

### Data Precision

Each data source has an associated level of precision. The groundwater water vulnerability mapping has a reference scale of 1:100,000. Whereas LiDAR data has a 1 metre resolution, which means that each 1m by 1m area of land is assigned a single elevation value. Much of the Island wide data (e.g. Groundwater Vulnerability Mapping, Source Protection Zones and Soils Data) come from national data sets, the spatial precision of which is low, but appropriate for strategic Island wide assessments. The individual potential development sites are attributed with values derived from these low precision national datasets (e.g. the generalised classifications of infiltration SuDS suitability, groundwater vulnerability and runoff potential). It must be noted that the precision of the data does not increase despite the analysis being performed on the smaller site specific scale.

It is important that the site specific detail of the datasets covered in the following section be considered in respect to the level of accuracy of the source data. The reference scale of any of the original source data should be deemed as the maximum scale at which the data is considered accurate.

# Appendix D

## Tables reproduced from NPPF

Table D.1 Flood zones

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### Zone 1 Low Probability

#### Definition

This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%)

#### Appropriate uses

All uses of land are appropriate in this zone.

#### FRA requirements

For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be considered in a FRA. This need only be brief unless the factors above or other local considerations require particular attention.

#### Policy aims

In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of SuDS.

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### Zone 2 Medium Probability

#### Definition

This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year.

#### Appropriate uses

Essential infrastructure and the water-compatible, less vulnerable and more vulnerable uses, as set out in Table 2, are appropriate in this zone. The highly vulnerable uses are only appropriate in this zone if the Exception Test is passed.

#### FRA requirements

All development proposals in this zone should be accompanied by a Flood Risk Assessment.

#### Policy aims

In this zone, developers and Local Authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development, and the appropriate application of sustainable drainage systems.

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### Zone 3 – High probability

#### Definition

This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

#### Appropriate uses

The water-compatible and less vulnerable uses of land (Table 2) are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable uses and essential infrastructure should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.

#### FRA requirements

All development proposals in this zone should be accompanied by a Flood Risk Assessment.

#### Policy aims

In this zone, developers and Local Authorities should seek opportunities to:

Reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage systems;

Relocate existing development to land in zones with a lower probability of flooding; and

Create space for flooding to occur by restoring functional floodplain and flood flow pathways and by identifying, allocating and safeguarding open space for flood storage.

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Table D.2 NPPF Flood Risk Vulnerability Classification

<b>Essential Infrastructure</b>	Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk, and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.
<b>Highly Vulnerable</b>	Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding. Emergency dispersal points. Basement dwellings. Caravans, mobile homes and park homes intended for permanent residential use. Installations requiring hazardous substances consent
<b>More Vulnerable</b>	Hospitals. Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels. Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels. Non-residential uses for health services, nurseries and educational establishments. Landfill and sites used for waste management facilities for hazardous waste. Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.
<b>Less Vulnerable</b>	Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in ‘more vulnerable’; and assembly and leisure. Land and buildings used for agriculture and forestry. Waste treatment (except landfill and hazardous waste facilities). Minerals working and processing (except for sand and gravel working). Water treatment plants. Sewage treatment plants (if adequate pollution control measures are in place).
<b>Water-compatible Development</b>	Flood control infrastructure. Water transmission infrastructure and pumping stations. Sewage transmission infrastructure and pumping stations. Sand and gravel workings. Docks, marinas and wharves. Navigation facilities. MOD defence installations. Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. Water-based recreation (excluding sleeping accommodation). Lifeguard and coastguard stations. Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

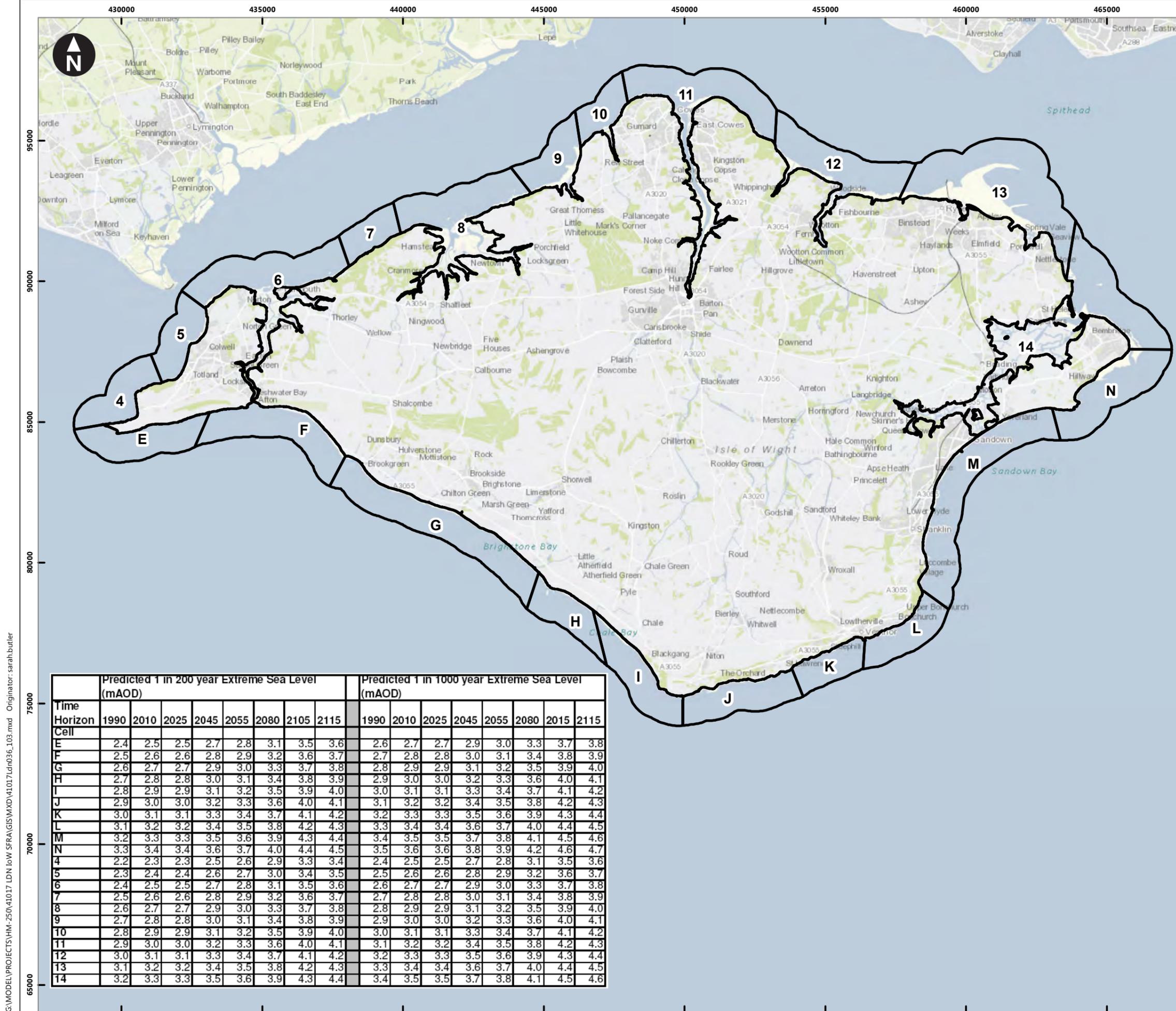
Table D.3 Flood Risk Vulnerability and Flood Zone "Compatibility"

Flood Risk Vulnerability classification (See Table D.2)		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b "Functional floodplain"	Exception Test required	✓	×	×	×



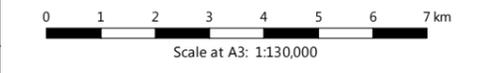
# Appendix E

## Tidal climate change predictions



Key  
 Isle of Wight coastal cells

The Coastal Cells illustrated in Figure E1 were provided by the Environment Agency and the 1990 base sea levels were confirmed by the Environment Agency on the 07/09/09. The climate change predictions are based on the incremental rates provided in Table B.1. in PPS25



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Isle of Wight  
 Strategic Flood Risk Assessment

**Figure E1**  
 Coastal cells and predicted extreme sea levels

Time Horizon	Predicted 1 in 200 year Extreme Sea Level (mAOD)								Predicted 1 in 1000 year Extreme Sea Level (mAOD)							
	1990	2010	2025	2045	2055	2080	2105	2115	1990	2010	2025	2045	2055	2080	2015	2115
Cell E	2.4	2.5	2.5	2.7	2.8	3.1	3.5	3.6	2.6	2.7	2.7	2.9	3.0	3.3	3.7	3.8
Cell F	2.5	2.6	2.6	2.8	2.9	3.2	3.6	3.7	2.7	2.8	2.8	3.0	3.1	3.4	3.8	3.9
Cell G	2.6	2.7	2.7	2.9	3.0	3.3	3.7	3.8	2.8	2.9	2.9	3.1	3.2	3.5	3.9	4.0
Cell H	2.7	2.8	2.8	3.0	3.1	3.4	3.8	3.9	2.9	3.0	3.0	3.2	3.3	3.6	4.0	4.1
Cell I	2.8	2.9	2.9	3.1	3.2	3.5	3.9	4.0	3.0	3.1	3.1	3.3	3.4	3.7	4.1	4.2
Cell J	2.9	3.0	3.0	3.2	3.3	3.6	4.0	4.1	3.1	3.2	3.2	3.4	3.5	3.8	4.2	4.3
Cell K	3.0	3.1	3.1	3.3	3.4	3.7	4.1	4.2	3.2	3.3	3.3	3.5	3.6	3.9	4.3	4.4
Cell L	3.1	3.2	3.2	3.4	3.5	3.8	4.2	4.3	3.3	3.4	3.4	3.6	3.7	4.0	4.4	4.5
Cell M	3.2	3.3	3.3	3.5	3.6	3.9	4.3	4.4	3.4	3.5	3.5	3.7	3.8	4.1	4.5	4.6
Cell N	3.3	3.4	3.4	3.6	3.7	4.0	4.4	4.5	3.5	3.6	3.6	3.8	3.9	4.2	4.6	4.7
Cell 4	2.2	2.3	2.3	2.5	2.6	2.9	3.3	3.4	2.4	2.5	2.5	2.7	2.8	3.1	3.5	3.6
Cell 5	2.3	2.4	2.4	2.6	2.7	3.0	3.4	3.5	2.5	2.6	2.6	2.8	2.9	3.2	3.6	3.7
Cell 6	2.4	2.5	2.5	2.7	2.8	3.1	3.5	3.6	2.6	2.7	2.7	2.9	3.0	3.3	3.7	3.8
Cell 7	2.5	2.6	2.6	2.8	2.9	3.2	3.6	3.7	2.7	2.8	2.8	3.0	3.1	3.4	3.8	3.9
Cell 8	2.6	2.7	2.7	2.9	3.0	3.3	3.7	3.8	2.8	2.9	2.9	3.1	3.2	3.5	3.9	4.0
Cell 9	2.7	2.8	2.8	3.0	3.1	3.4	3.8	3.9	2.9	3.0	3.0	3.2	3.3	3.6	4.0	4.1
Cell 10	2.8	2.9	2.9	3.1	3.2	3.5	3.9	4.0	3.0	3.1	3.1	3.3	3.4	3.7	4.1	4.2
Cell 11	2.9	3.0	3.0	3.2	3.3	3.6	4.0	4.1	3.1	3.2	3.2	3.4	3.5	3.8	4.2	4.3
Cell 12	3.0	3.1	3.1	3.3	3.4	3.7	4.1	4.2	3.2	3.3	3.3	3.5	3.6	3.9	4.3	4.4
Cell 13	3.1	3.2	3.2	3.4	3.5	3.8	4.2	4.3	3.3	3.4	3.4	3.6	3.7	4.0	4.4	4.5
Cell 14	3.2	3.3	3.3	3.5	3.6	3.9	4.3	4.4	3.4	3.5	3.5	3.7	3.8	4.1	4.5	4.6

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