GREENKEEPER
ENHANCING URBAN GREEN INFRASTRUCTURE

Green Infrastructure & Climate Change Conference

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Greenspaces are essential to productive and healthy cities, but the benefits they deliver are difficult to quantify

1

Healthy and productive cities depend on access to green infrastructure

2

Yet planners and local authorities currently lack the tools to assess the benefits greenspaces provide

3

A poor evidence base leads to investments that do no meet the needs of local communities, underproviding crucial services

We combine expertise in economic valuation, urban planning and cutting edge health research to help quantify these benefits

New datasets on the use and features of greenspaces and new evidence on the multiple benefits they provide allow better assessments

Actual greenspace use

Survey and mobile phone data

— 2,500 public greenspaces across several UK cities
— English survey data on greenspace recreational activities (MENE)
— aggregated information on home location, distance travelled
— high level of spatial accuracy to infer use of specific areas

Similar data for Northern Ireland?

Greenspace features

GIS, aerial and census data

— greenspace: tree cover, toilets, cafes, sports facilities, accessibility
— neighbourhood: greenness, crime, noise
— individual: gender, income, age

Economic, social and environmental benefits

Economic valuation

— physical health
— mental health
— recreation
— amenity
— air pollution removal
— carbon sequestration

With Greenkeeper, decisionmakers will have the tools to map, compare, and evaluate current and potential greenspace benefits
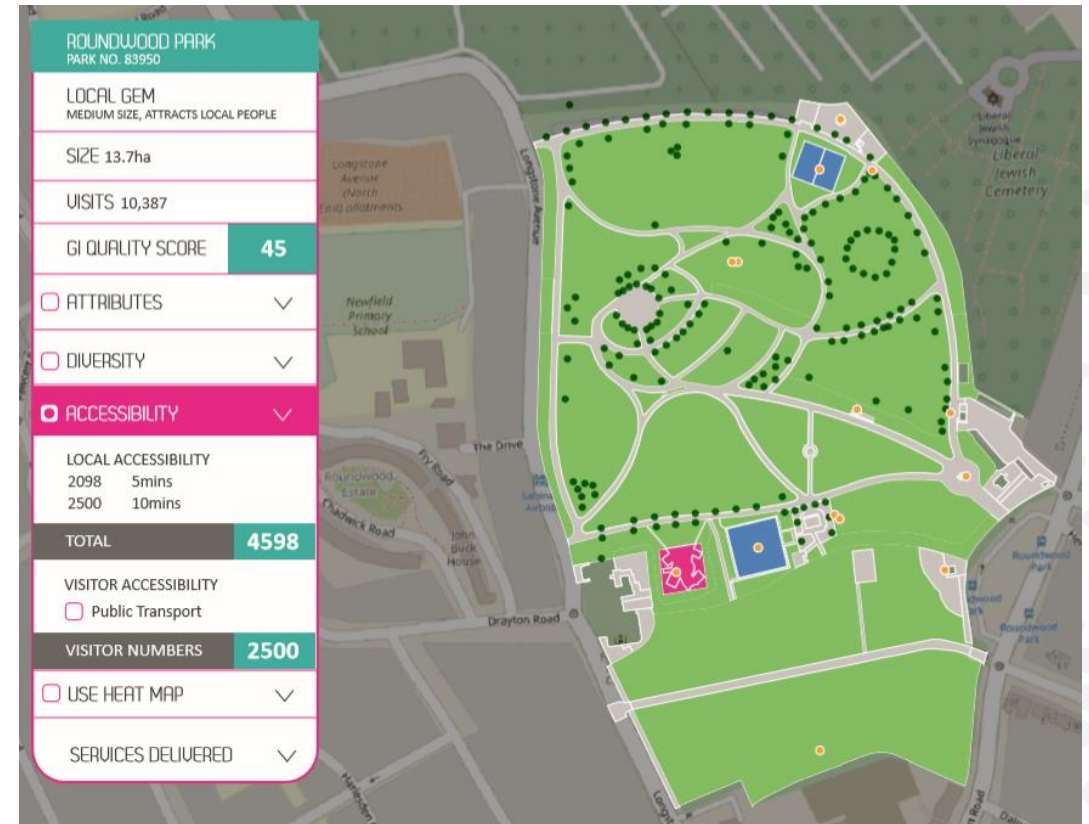
1 BASELINE INVENTORY

2 BENEFIT VALUATION
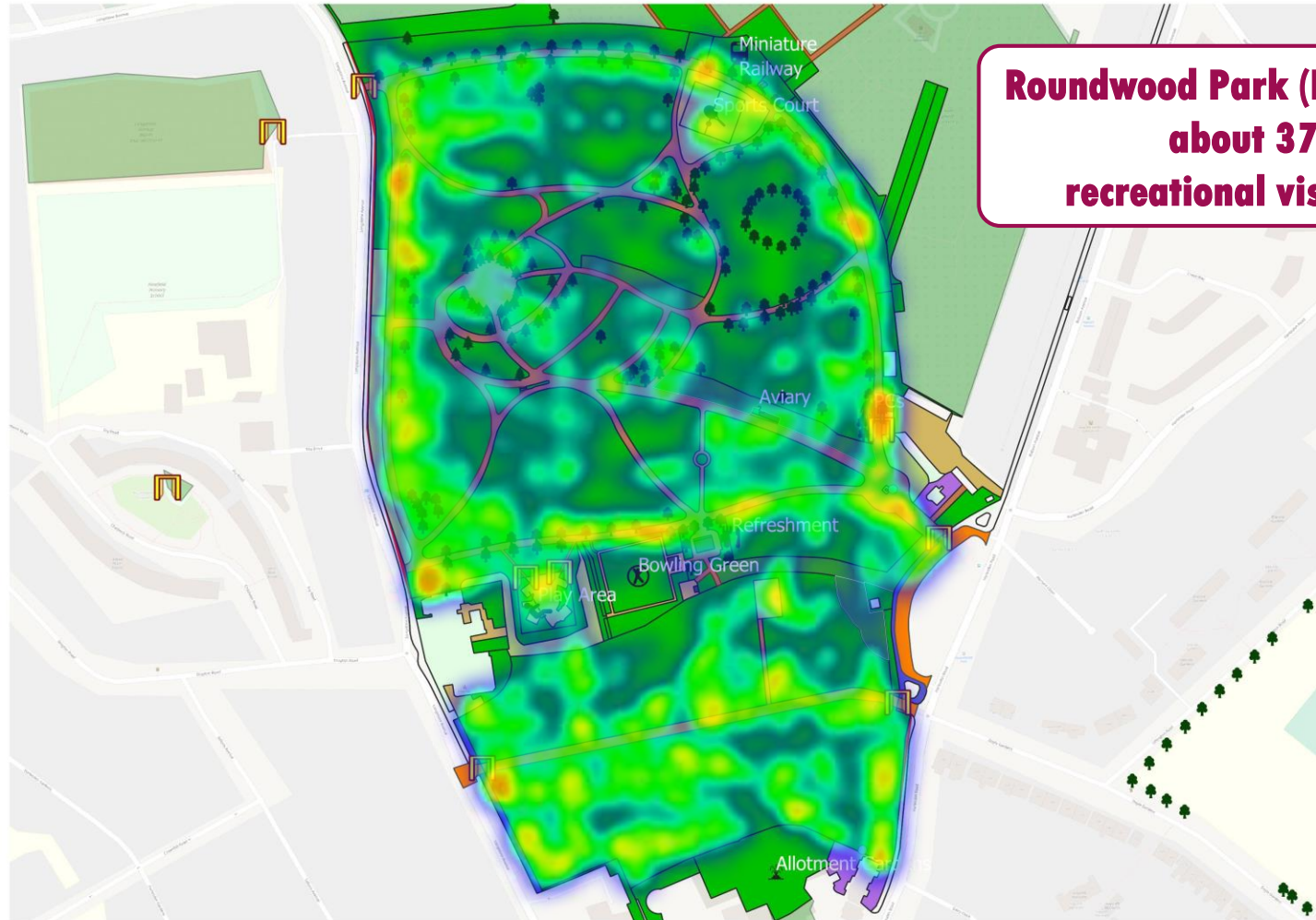
3 IMPACT OF INVESTMENT OPTIONS

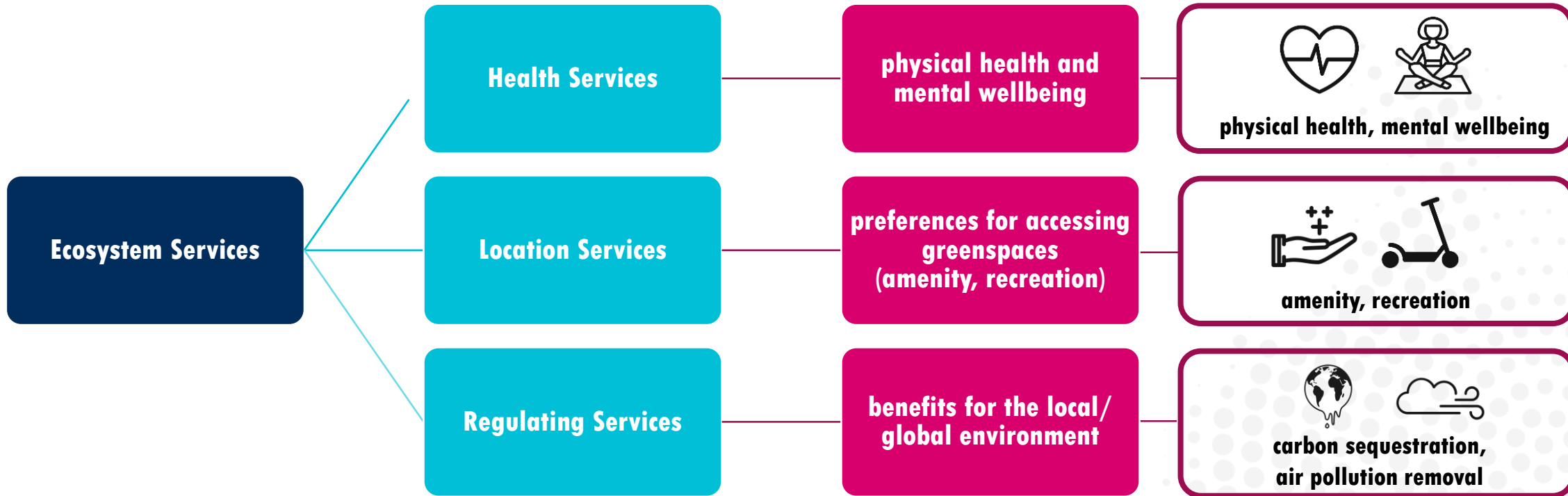The baseline inventory provides comprehensive information about the characteristics and features of urban greenspaces

Visit numbers and heat maps provide information about how greenspaces are used for recreation and what visitors value about them

Roundwood Park (London) receives about 375,000 recreational visits annually

GREENKEEPER ENHANCING URBAN GREEN INFASTRUCTURE

Ecosystem Services

Health Services — physical health and mental wellbeing — physical health, mental wellbeing

Location Services — preferences for accessing greenspaces (amenity, recreation) — amenity, recreation

Regulating Services — benefits for the local/ global environment — carbon sequestration, air pollution removal

We measure ecosystem services as benefits that would be lost if a green space were removed or changed – or the benefits gained by providing a new greenspace.

The values are expressed in physical and monetary terms, and allow a comparison across a peer group

Example values of ecosystem services:

£5,000 value of physical life years

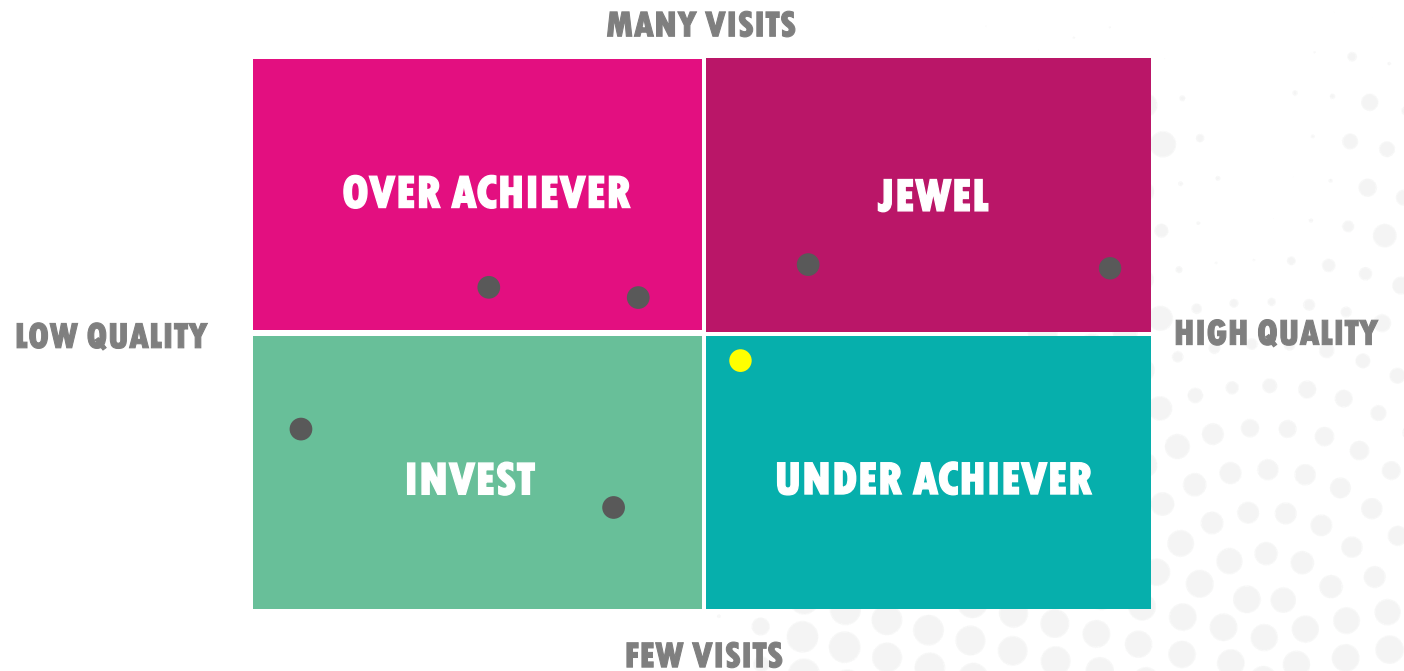£100,000 value of improvement in wellbeing

£60,000 amenity value

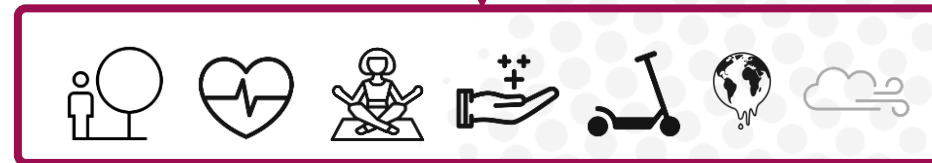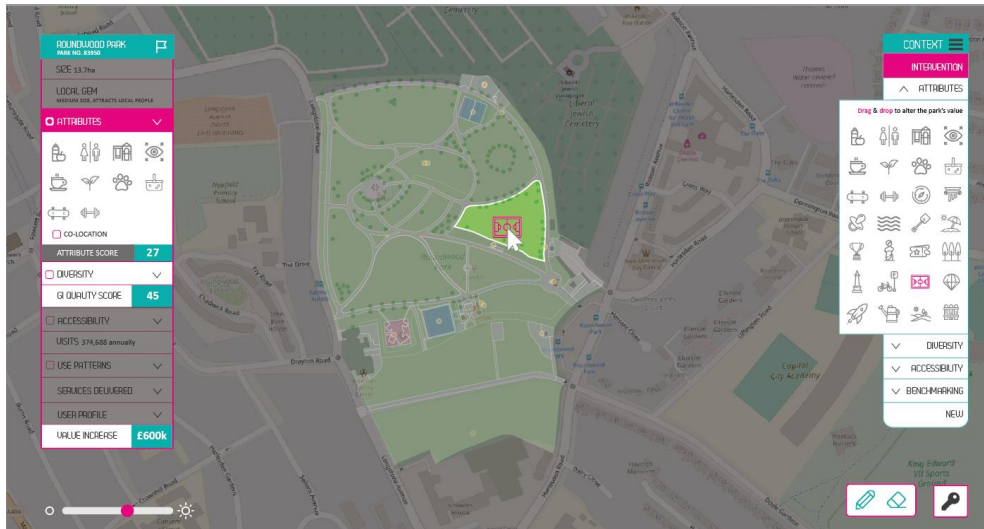£50,000 recreation value

<£1,000 carbon sequestration value

NO_2, O3, PM2.5, SO_2 removed

MANY VISITS

OVER ACHIEVER	JEWEL
INVEST	UNDER ACHIEVER

LOW QUALITY

HIGH QUALITY

FEW VISITS

Greenkeeper models changes in visits and ecosystem services that would result from investment or disinvestment in greenspaces

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Adults who exercise at least 150 minutes a week:

– health benefits of physical activity in greenspaces

– based on the estimated increase and quality and quantity of life years

– reduction in risk for ischemic heart disease, stroke and type 2 diabetes
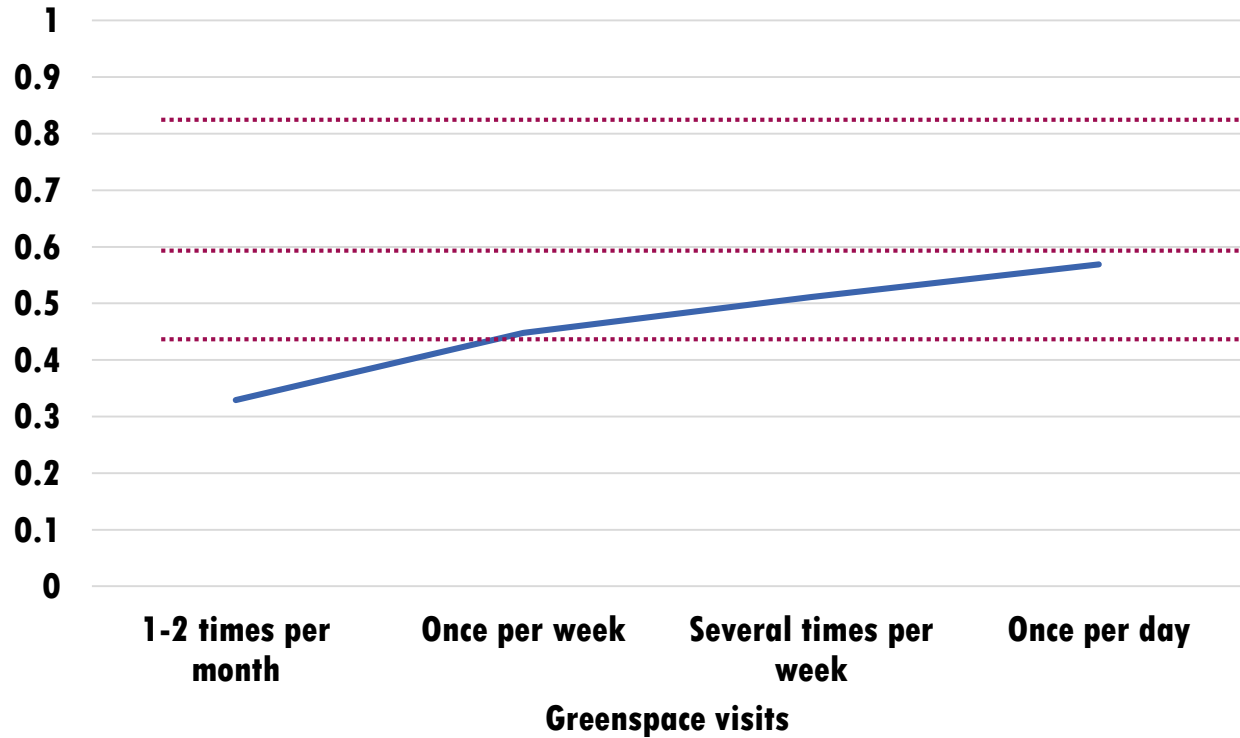
Adults who exercise less than 150 minutes a week:

– health benefits of walking and cycling in greenspaces

– based on the World Health Organisation's Health Economic Assessment Tool

**Improved reported life satisfaction on a 1-10 scale
compared to not visiting greenspaces**

able-bodied compared to disabled

employed full-time compared to unemployed

married compared to unmarried

1-2 times per month • Once per week • Several times per week • Once per day

Greenspace visits

Greenkeeper will be launched in September 2019

PROGRESS																	

2018									2019								
APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
INCEPTION				ANALYSIS							BUILD				TEST		
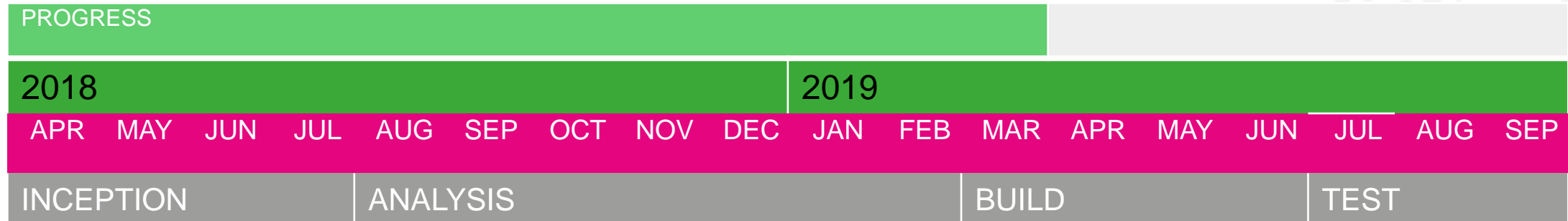
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