TAYLOR | AIREY

D/020/016/002

PBN benchmarking

18 September 2019

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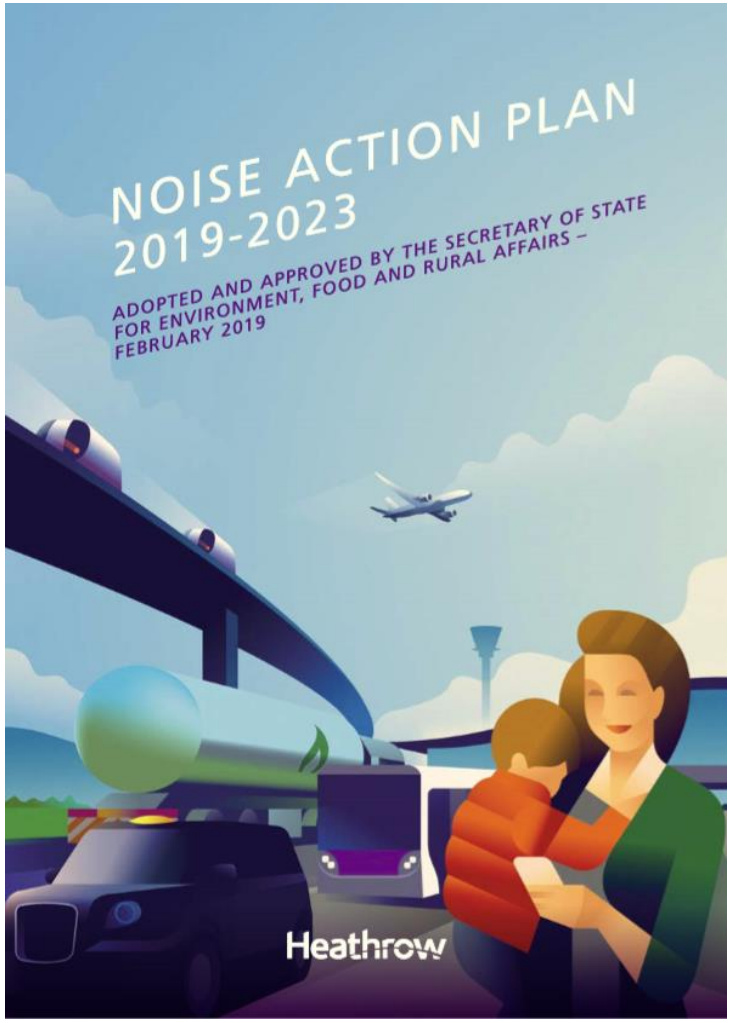
The PBN study arose from the Noise Action Plan



Quieter Procedures

We will work with all our stakeholders to explore and employ best practice, lower noise operating procedures to reduce the impact of aircraft on residents

REF	SHORT TITLE	ACTIONS	DATE	PERFORMANCE INDICATOR	TARGET	IMPACT	COMMUNITIES AFFECTED
2.13	PBN Implementation	With the HCNF we will develop a scope for a study on the benchmarking of Performance Based Navigation (PBN) implementation including international experiences and publish a report by 2019.	2019	Scope developed	Report published	Arrivals Departures	Communities within and beyond 55dB L_{den}

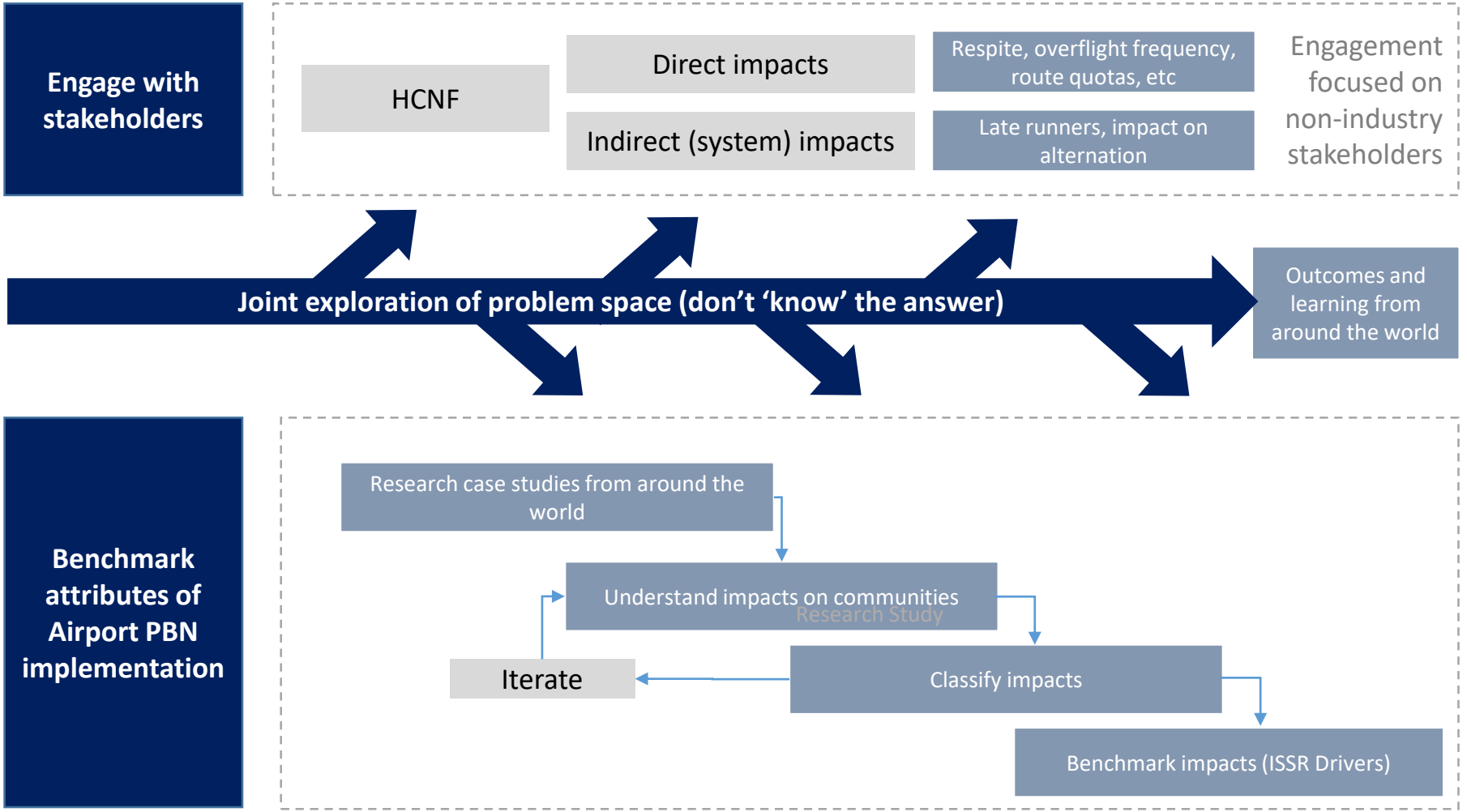
Phase 1: Define & engage

- Governance
- Interaction with HCNF
  - Members
  - Advisor (To70)
- Report
- Issues
  - Assessment criteria
  - Comparators

Phase 2: Benchmark & report

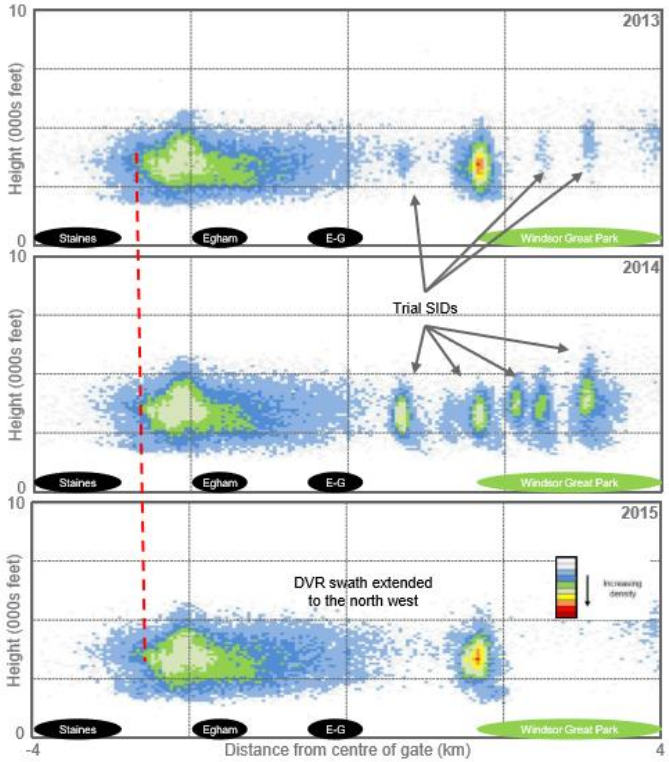
- Best practice for PBN implementation
- Communication strategy
- Supporting tools
- "Soft" implementation strategy

We aim to deliver a substantive report, engaging closely with the HCNF



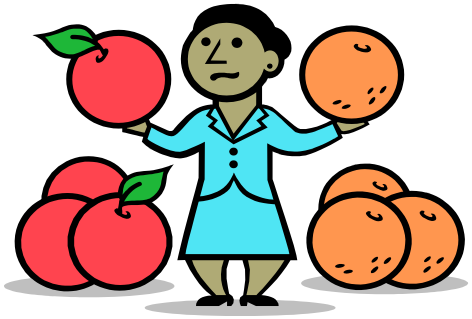
There are multiple challenges

Community engagement



- Previous flight trials
- Engaging with those not currently overflown
- Limited understanding of respite
- Multiple ACPs ongoing

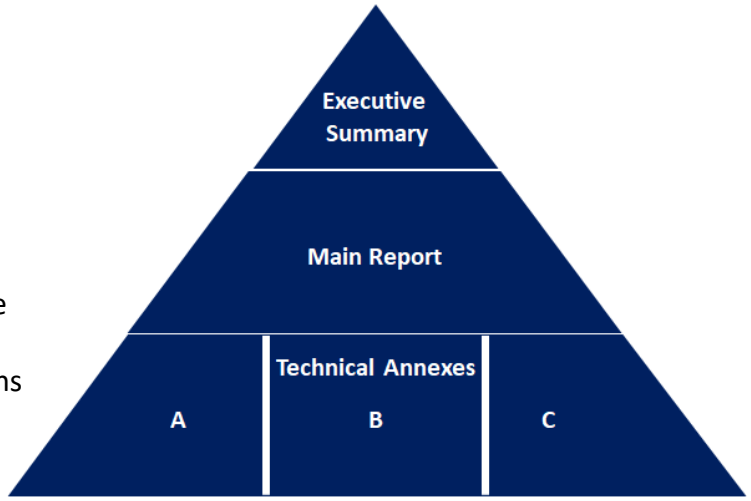
Benchmarking



- Everywhere is different & unique
  - Understand differences
  - Make appropriate comparisons
  - Comparator pool
- Assessment criteria & metrics
  - What is of interest?
  - Can it be quantified?
  - How important is it?
- Presentation of results
  - Clear & unambiguous
  - Transparent
  - Intuitive

Airport	Score per metric (A to J)										
	A	B	C	D	E	F	G	H	I	J	
AAA	5	5	3	2	5	4	4	5	4	5	TOTAL SCORE = 42
BBB	1	4	3	3	5	4	4	5	1	5	TOTAL SCORE = 38
CCC	3	3	3	3	3	4	4	5	3	5	TOTAL SCORE = 36
DDD	2	3	4	3	3	4	4	4	3	1	TOTAL SCORE = 31
EEE	1	2	4	2	3	2	4	4	3	1	TOTAL SCORE = 26
FFF	5	2	2	2	3	2	4	1	3	1	TOTAL SCORE = 25
GGG	1	1	2	2	1	2	3	1	3	1	TOTAL SCORE = 17
HHH	1	1	1	1	1	1	1	1	1	1	SCORE = 10

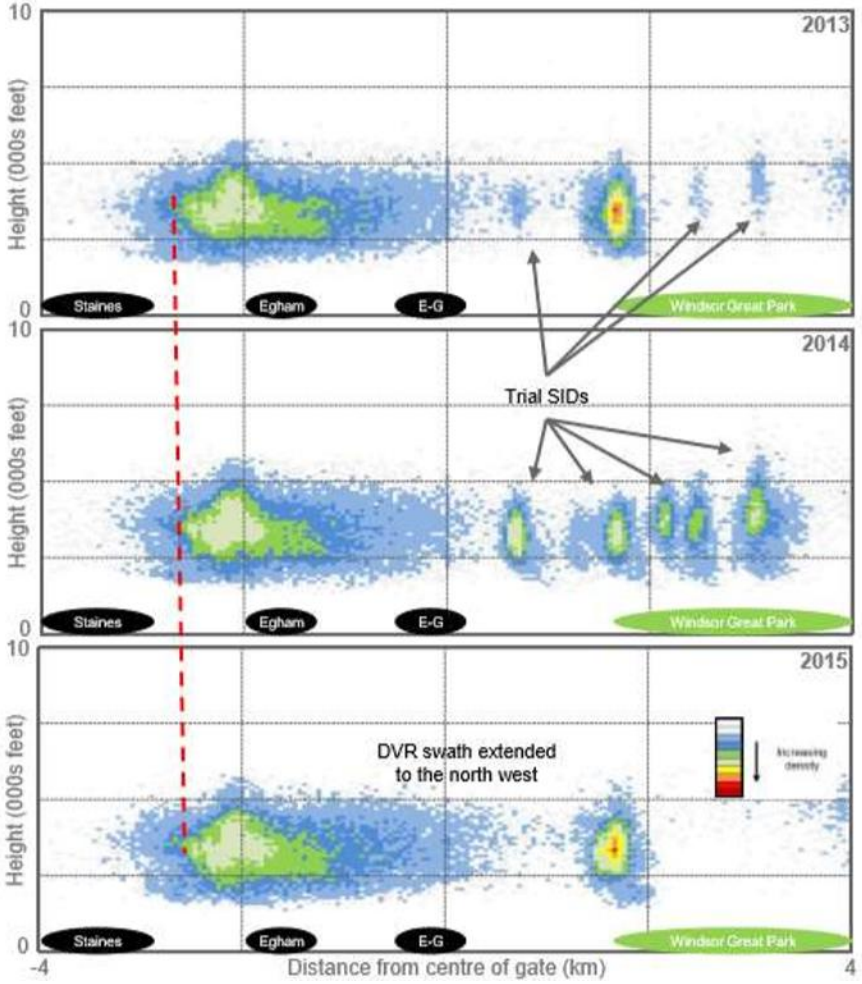
Complexity requires reporting at different levels of detail



Report structure

- What is PBN (explain not define)?
- How can it be used?
- What are the potential benefits & negative impacts?

Methodology



ISSR Framework

- Regulatory requirements
- Infrastructure layout
- Geographic location
- Airspace structure
- Equipment capability
- Customer requirements

I

Inherent drivers are mostly extraneous, beyond the unilateral influence of the airport. These typically have long term strategic impacts and include, but not exclusively, the regulatory environment, the geographical positioning and conceptual layout of the airport and airspace

- Scale
- Capacity utilisation
- Operational complexity

S

Structural drivers also have long term strategic implications, but are more readily within the influence of the airport. These typically, but not exclusively include the scale, capacity utilisation, and operational complexity

- Operational processes

S

Systemic drivers are within the day to day control of the management and include operational and business processes and incentive schemes

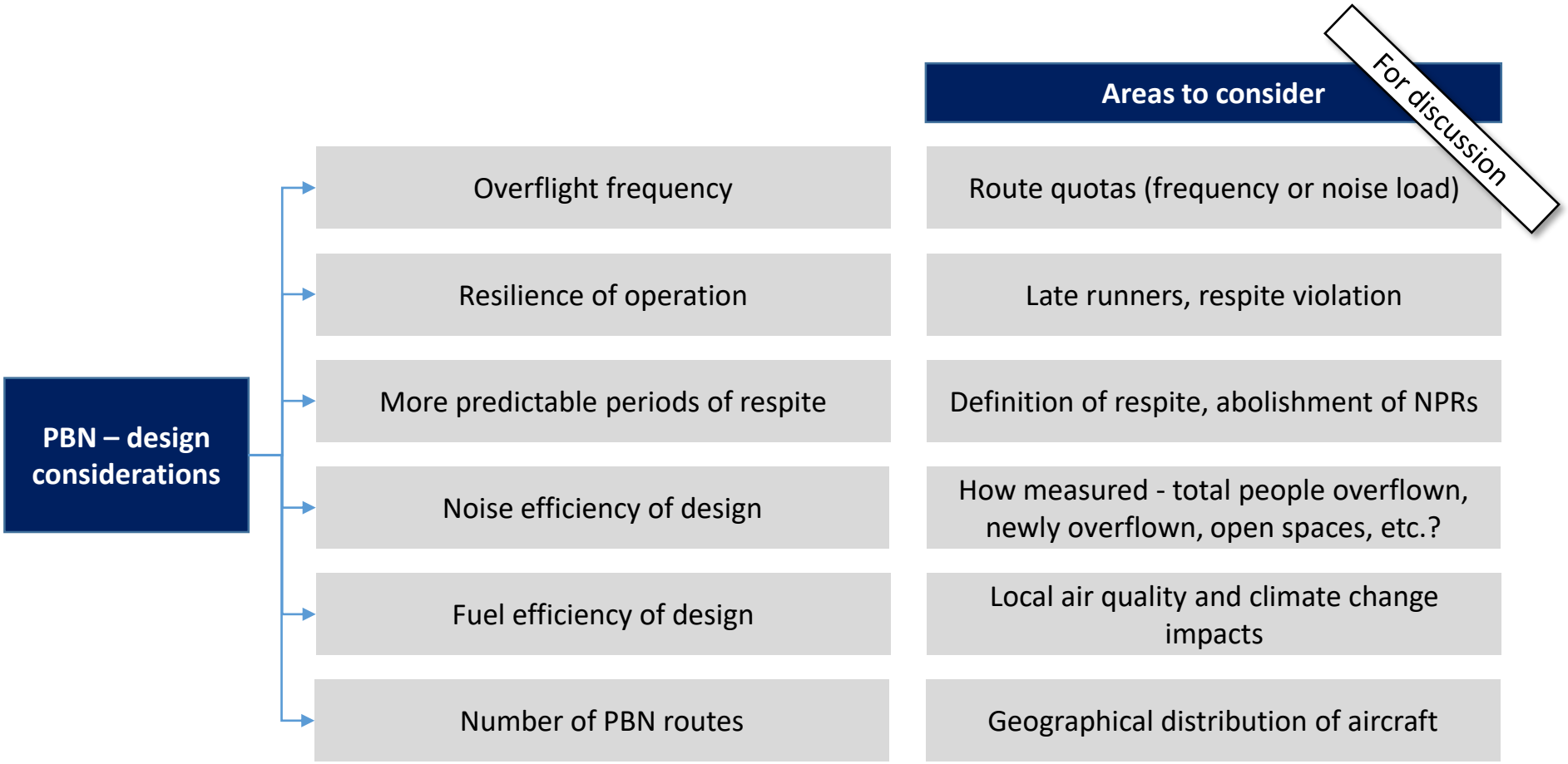
- Unit costs

R

Realised drivers are the executional out-turn impacts of the above. These drivers are usually expressed in terms of costs and may not of interest to this benchmarking exercise

Benchmarking PBN – Design and Implementation

Working example



Benchmarking PBN – Communication

Working example

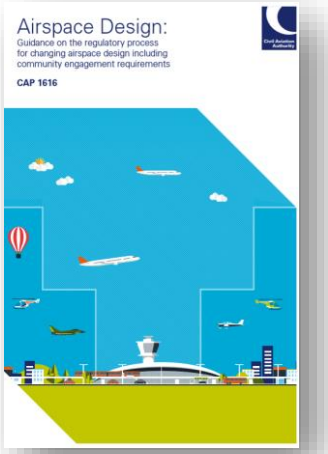
- What mechanisms exist to engage the community?
- Understanding concerns around PBN

PBN – engagement

- Promotion of interest and engagement with subject
- Readily available, accessible and understandable information
- Promotion of consultation and feedback; how to best maintain engagement
- How feedback is incorporated
- Clear communication around introduction into service

For discussion

- What it is & why it is important
- Where are the routes what are their impacts?
- How can the community be effectively engaged?
  Use of best practice guidelines (eg Cap 1616)
  Eg: Written and electronic material, meetings, etc.



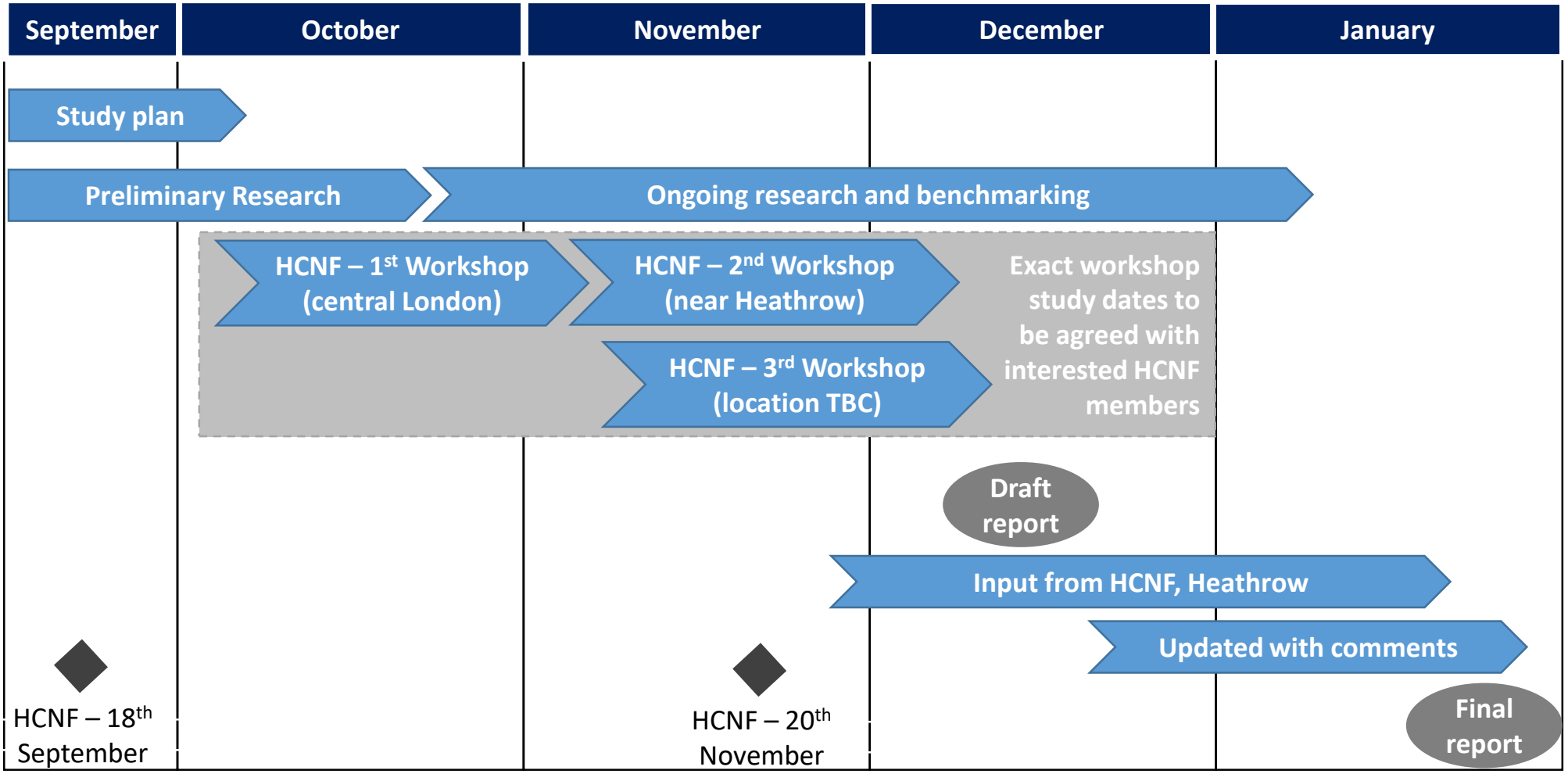
Forward plan

- Stakeholders
  - A HCNF focused study – we aim to deliver a robust and useful report
  - HCNF & advisor to be engaged on scope and invited to contribute learning & input
  - Heathrow is providing study resources and staff are available to provide input & clarification on plans

- Reporting – monthly updates to HCNF and Heathrow Airspace Team
  - Community Engagement Board also to be informed of the study

- Project plan
  - Perform preliminary research
  - Determine dates for workshops with the HCNF
  - Draft report – define PBN, options for implementation and operation
  - Conduct benchmarking
  - Identify best practice for PBN implementation
  - Invite comments from stakeholders (including ICCAN, CAA, etc)

Study Timelines – 2019/2020



Initial questions – Scoping the study

Deep dive questions 1-3 in first two workshops

Area for investigation	Questions or area of study to address
1. Develop common definition of PBN	Formulate a common understanding of PBN, its options and impacts
2. Select peer group Which airports should we examine	**Which airports should we consider? Do we know good of examples of best and worst practice? What should be done and what avoided? Eg** - North American airports: New York, Washington, Montreal, etc. - Heathrow experiences: '3 villages study', etc.
3. Define the issues to addressed when making comparisons What aspects of PBN should be addressed and what metrics should be used to judge success	**What areas of PBN design and implementation are important to HCNF?** - Communications (e.g. how well are changes are communicated?) - Design & planning (e.g. has respite been considered?) - operations (e.g. how is PBN introduction phased over time?)
4. Draw conclusions What benchmarking metrics should be use to judge success of a PBN implementation	**What recommendations can we make?** What lessons can we draw? What areas should Heathrow focus future efforts? Where is existing thinking relatively mature?

Involvement in the study

- Your involvement in the forthcoming workshops is encouraged!
- Should HCNF stakeholders wish to be involved please email:
  - PBNstudy@taylorairey.com
  - We will agree workshop dates with interested participants
- Help us to:
  - Define the scope of the study
  - Make sure we examine interesting comparator airports
  - Generate an informative and useful study!
- Points to note:
  - Heathrow will disseminate information on Taylor Airey's behalf to the HCNF
  - This avoids GDPR issues with Heathrow sharing contact details of a 3rd party