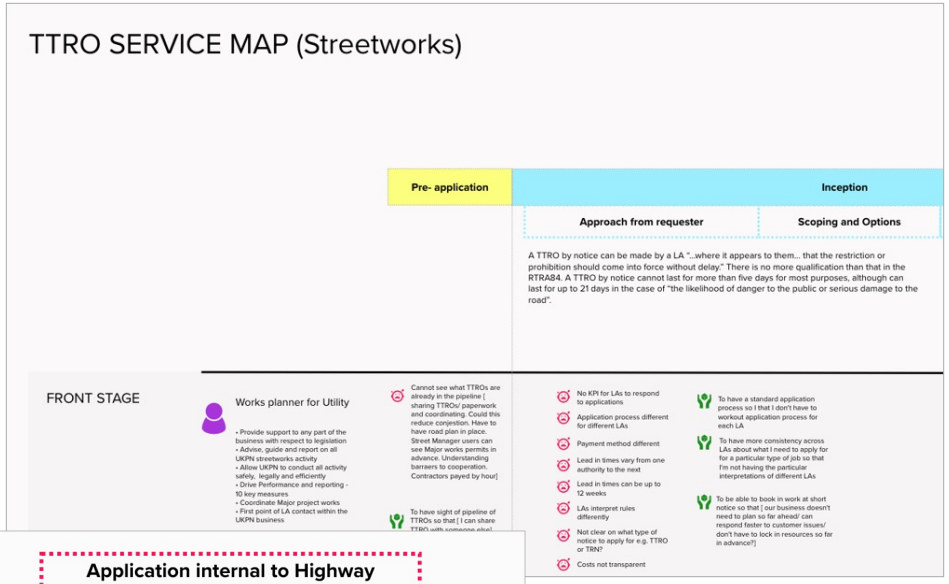
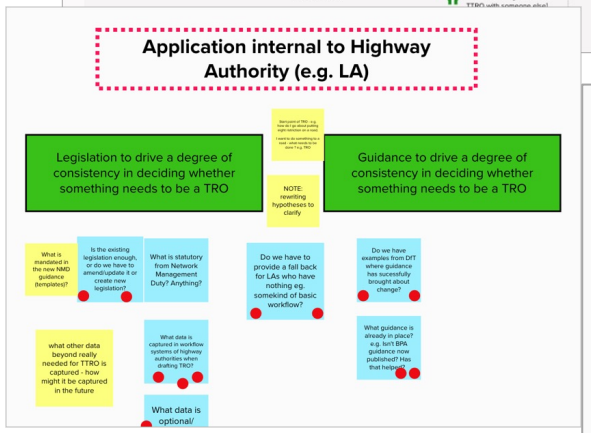
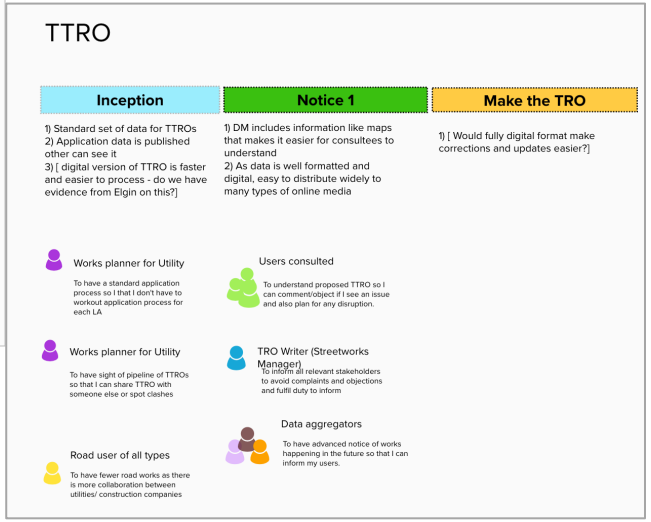
User Research

Approach:

- Reviewed research from Discovery and Policy Alpha and summarised in context of Data Model Alpha
- Defined hypotheses, declared assumptions and identified risky assumptions about users
- We did *not* attempt to speak with all possible stakeholders. That would not have been possible within a single Alpha. Instead, we focused on our riskiest assumptions.







TTRO SERVICE MAP (Streetworks)

Pre- application	Inception	
	Approach from requester	**Scoping and Options**
	A TTRO by notice can be made by a LA "...where it appears to them... that the restriction or prohibition should come into force without delay." There is no more qualification than that in the RTRA84. A TTRO by notice cannot last for more than five days for most purposes, although can last for up to 21 days in the case of "the likelihood of danger to the public or serious damage to the road".	

FRONT STAGE

Works planner for Utility

- Provide support to any part of the business with respect to legislation
- Advise, guide and report on all UKPN streetworks activity
- Allow UKPN to conduct all activity safely, legally and efficiently
- Drive Performance and reporting - 10 key measures
- Coordinate Major project works
- First point of LA contact within the UKPN business

Cannot see what TTROs are already in the pipeline [sharing TTROs/ paperwork and coordinating. Could this reduce conjestion. Have to have road plan in place. Street Manager users can see Major works permits in advance. Understanding barraers to cooperation. Contractors payed by hour]

To have sight of pipeline of TTROs so that [I can share TTRO with someone else]

No KPI for LAs to respond to applications

Application process different for different LAs

Payment method different

Lead in times vary from one authority to the next

Lead in times can be up to 12 weeks

LAs interpret rules differently

Not clear on what type of notice to apply for e.g. TTRO or TRN?

Costs not transparent

To have a standard application process so I that I don't have to workout application process for each LA

To have more consistency across LAs about what I need to apply for for a particular type of job so that I'm not having the particular interpretations of different LAs

To be able to book in work at short notice so that [our business doesn't need to plan so far ahead/ can respond faster to customer issues/ don't have to lock in resources so far in advance?]

Application internal to Highway Authority (e.g. LA)

Start point at TRO - e.g. how do I go about putting eight ristriction on a road.

I want to do something to a road - what needs to be done ? e.g. TRO

Legislation to drive a degree of consistency in deciding whether something needs to be a TRO

Guidance to drive a degree of consistency in deciding whether something needs to be a TRO

NOTE: rewriting hypotheses to clarify

What is mandated in the new NMD guidance (templates)?

Is the existing legislation enough, or do we have to amend/update it or create new legislation?

What is statutory from Network Management Duty? Anything?

Do we have to provide a fall back for LAs who have nothing eg. somekind of basic workflow?

Do we have examples from DfT where guidance has sucessfully brought about change?

what other data beyond really needed for TTRO is captured - how might it be captured in the future

What data is captured in workflow systems of highway authorities when drafting TRO?

What guidance is already in place? e.g. Isn't BPA guidance now published? Has that helped?

What data is optional/

TTRO

Inception

1) Standard set of data for TTROs
2) Application data is published other can see it
3) [digital version of TTRO is faster and easier to process - do we have evidence from Elgin on this?]

Notice 1

1) DM includes information like maps that makes it easier for consultees to understand
2) As data is well formatted and digital, easy to distribute widely to many types of online media

Make the TRO

1) [Would fully digital format make corrections and updates easier?]

Works planner for Utility

To have a standard application process so I that I don't have to workout application process for each LA

Users consulted

To understand proposed TTRO so I can comment/object if I see an issue and also plan for any disruption.

Works planner for Utility

To have sight of pipeline of TTROs so that I can share TTRO with someone else or spot clashes

TRO Writer (Streetworks Manager)

To inform all relevant stakeholders to avoid complaints and objections and fulfil duty to inform

Data aggregators

To have advanced notice of works happening in the future so that I can inform my users.

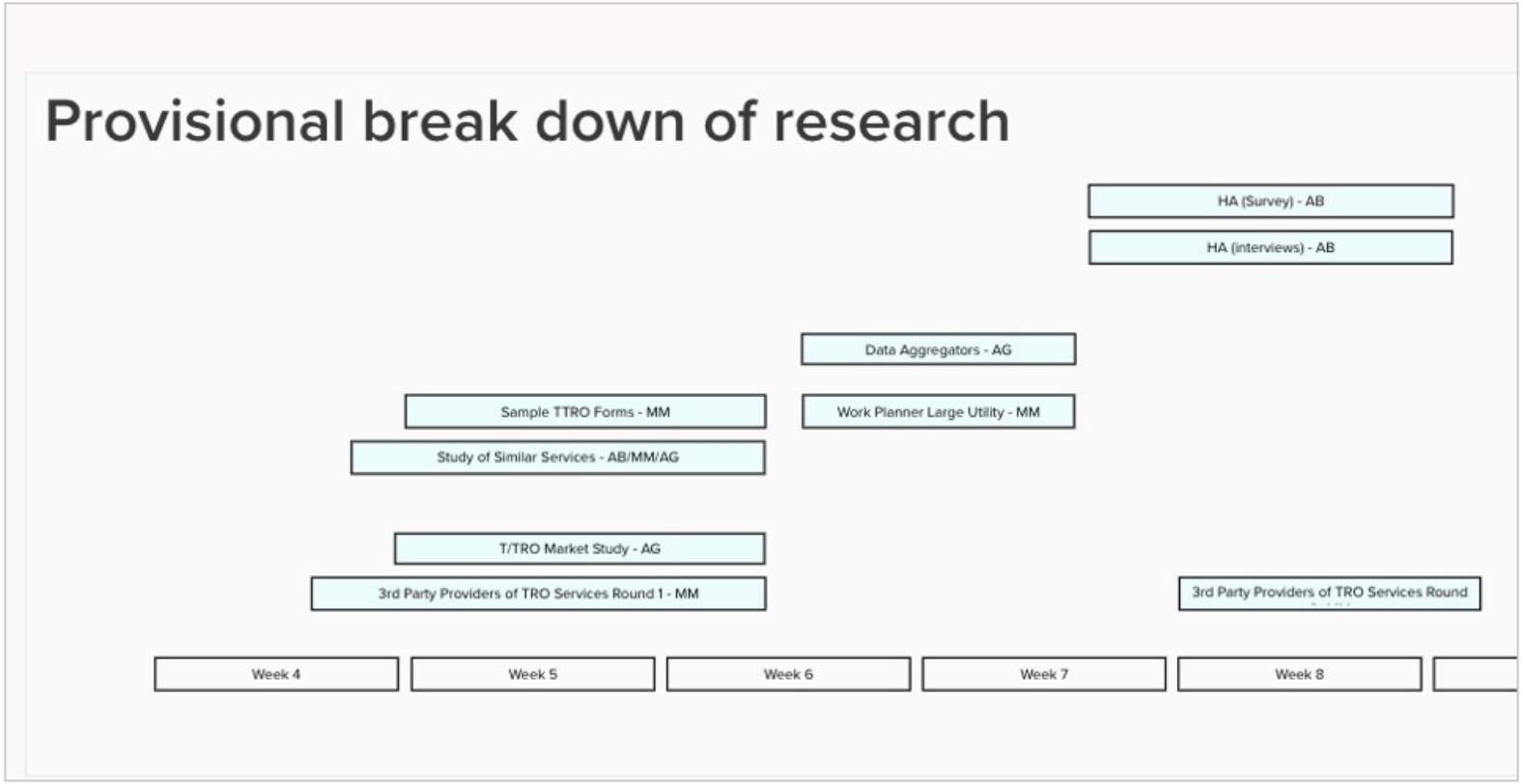
Road user of all types

To have fewer road works as there is more collaboration between utilities/ construction companies

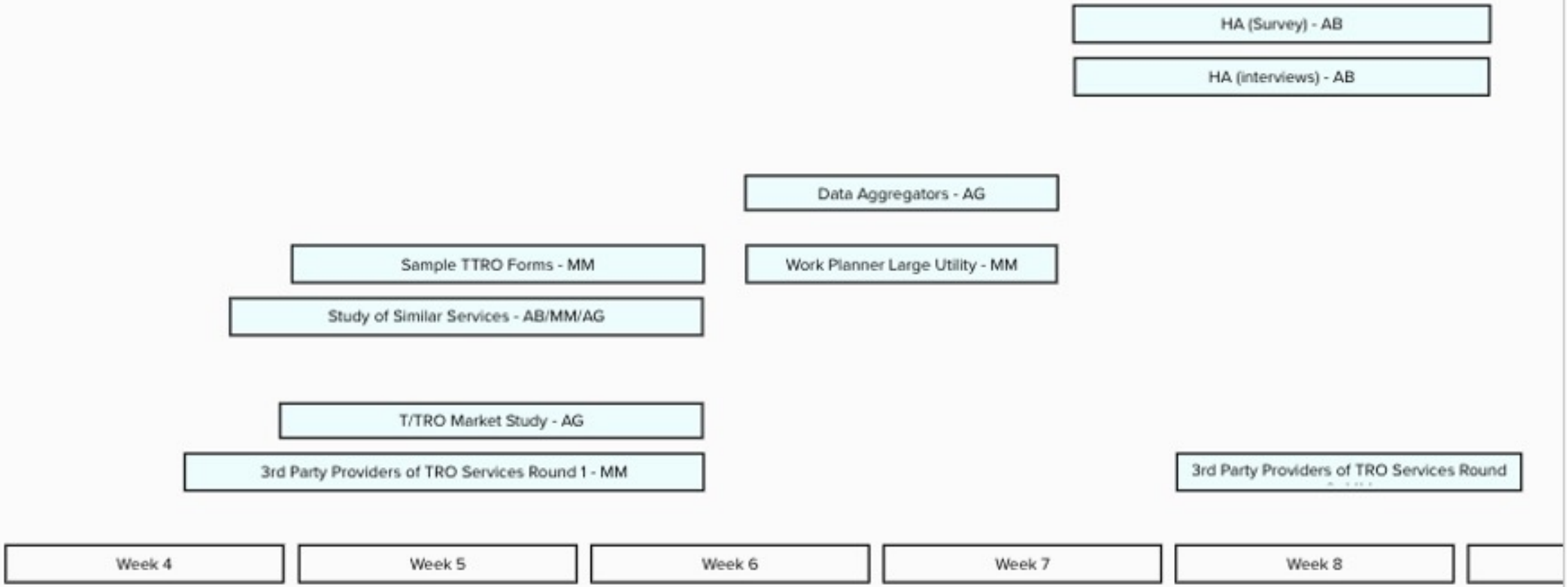
User Research

User groups we spoke with:

- 3rd Party Providers of TRO Services
  - 4 x interviews (two rounds)
- Market of Potential Providers of TRO services
  - 5 x interviews
  - Desk research
- Data Aggregators
  - 10 x interviews (multiple rounds)
- Utilities
  - 5 x interviews
- Highway Authorities
  - 14 x interviews
  - Online survey (responses from 80 HAs)
- Study of Similar Services
  - 3 x interviews



Provisional break down of research

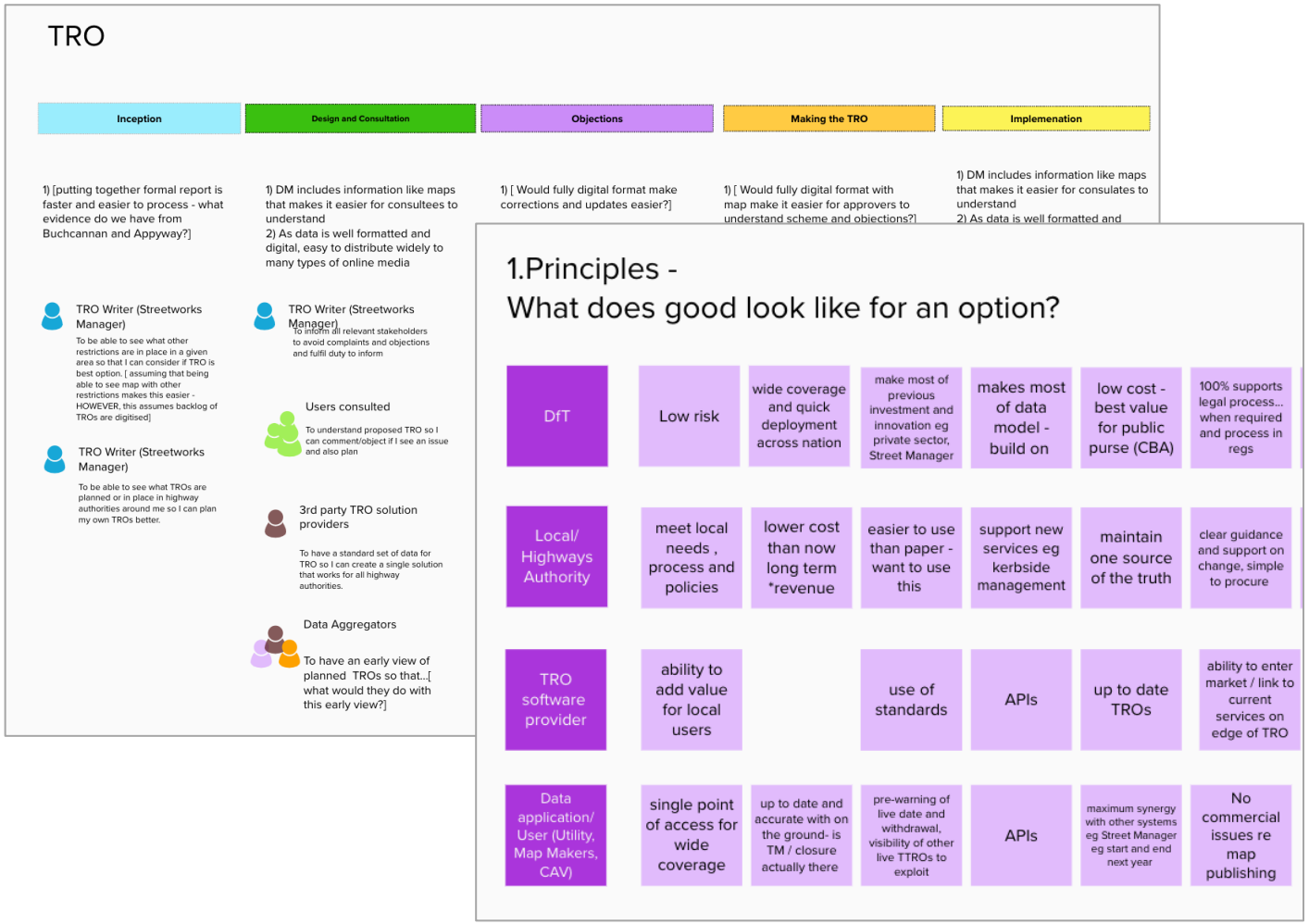


Service Design

Consolidated learning from previous research

From previous rounds of research we constructed a service map and layered users and their assumed needs.

We also agreed on a set of principles that should be used to shape the service.



TRO

Inception	Design and Consultation	Objections	Making the TRO	Implemenation
1) [putting together formal report is faster and easier to process - what evidence do we have from Buchcannan and Appyway?]	1) DM includes information like maps that makes it easier for consultees to understand 2) As data is well formatted and digital, easy to distribute widely to many types of online media	1) [Would fully digital format make corrections and updates easier?]	1) [Would fully digital format with map make it easier for approvers to understand scheme and objections?]	1) DM includes information like maps that makes it easier for consulates to understand 2) As data is well formatted and digital, easy to distribute widely to many types of online media

TRO Writer (Streetworks Manager)

To be able to see what other restrictions are in place in a given area so that I can consider if TRO is best option. [assuming that being able to see map with other restrictions makes this easier - HOWEVER, this assumes backlog of TROs are digitised]

TRO Writer (Streetworks Manager)

To be able to see what TROs are planned or in place in highway authorities around me so I can plan my own TROs better.

TRO Writer (Streetworks Manager)

To inform all relevant stakeholders to avoid complaints and objections and fulfil duty to inform

Users consulted

To understand proposed TRO so I can comment/object if I see an issue and also plan

3rd party TRO solution providers

To have a standard set of data for TRO so I can create a single solution that works for all highway authorities.

Data Aggregators

To have an early view of planned TROs so that...[what would they do with this early view?]

TRO Writer (Streetworks Manager)

To be able to see what other restrictions are in place in a given area so that I can consider if TRO is best option in light of objections. [assuming that being able to see map with other restrictions makes this easier - HOWEVER, this assumes backlog of TROs are digitised]

Approvers

Data aggregators

To know about restrictions on roads so that I can advise users of my system of the best route and parking ristrictions.

Road user of all types

To have advanced notice of road works so I can plan journey and know of parking ristrictions.

1.Principles -
What does good look like for an option?

DfT	Low risk	wide coverage and quick deployment across nation	make most of previous investment and innovation eg private sector, Street Manager	makes most of data model - build on	low cost - best value for public purse (CBA)	100% supports legal process... when required and process in regs	
Local/ Highways Authority	meet local needs , process and policies	lower cost than now long term *revenue	easier to use than paper - want to use this	support new services eg kerbside management	maintain one source of the truth	clear guidance and support on change, simple to procure	
TRO software provider	ability to add value for local users		use of standards	APIs	up to date TROs	ability to enter market / link to current services on edge of TRO	
Data application/ User (Utility, Map Makers, CAV)	single point of access for wide coverage	up to date and accurate with on the ground- is TM / closure actually there	pre-warning of live date and withdrawal, visibility of other live TTROs to exploit	APIs	maximum synergy with other systems eg Street Manager eg start and end next year	No commercial issues re map publishing	

Service Design

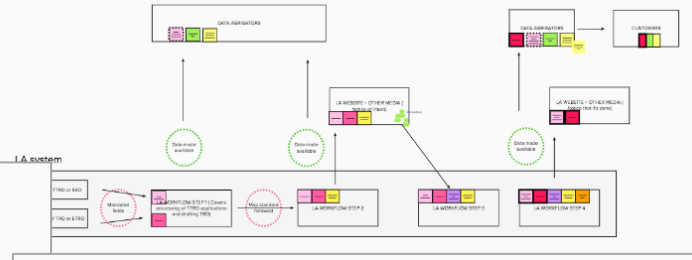
Experimenting with different models

We looked at different models and considered how well the met user needs and agreed with our set of principles.

1. Mandate only

Set out standards of what data needs to be collected, to what quality and how it should be made available to others. i.e. publish data model, API standards etc

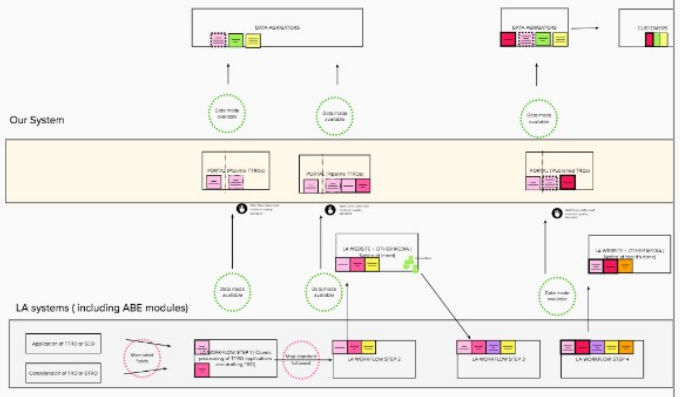
Support HAs with toolkits for custom development, grants, community of practice, negotiating discounts with ABE etc



2. Build 'keystone' parts of the service

Build the data pool and mandate that mandate that HAs have to publish to this data pool. This way standards can be policed and quality managed.

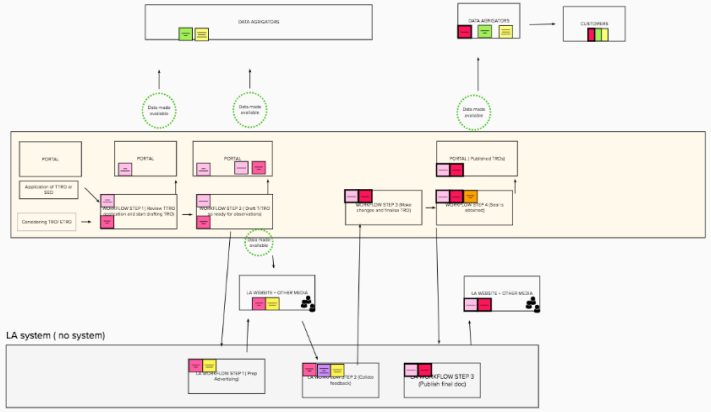
The stratgey here is to build just enough of system to shape the wider system that will be developed by the HAs themselves.



3. Build a light weight case management tool

This assumes the market is unable to provide a service that is appropriate or affordable for HAs.

It is therefor necessary for DfT to commision the development of a TRO service which may include some or all types of TROs



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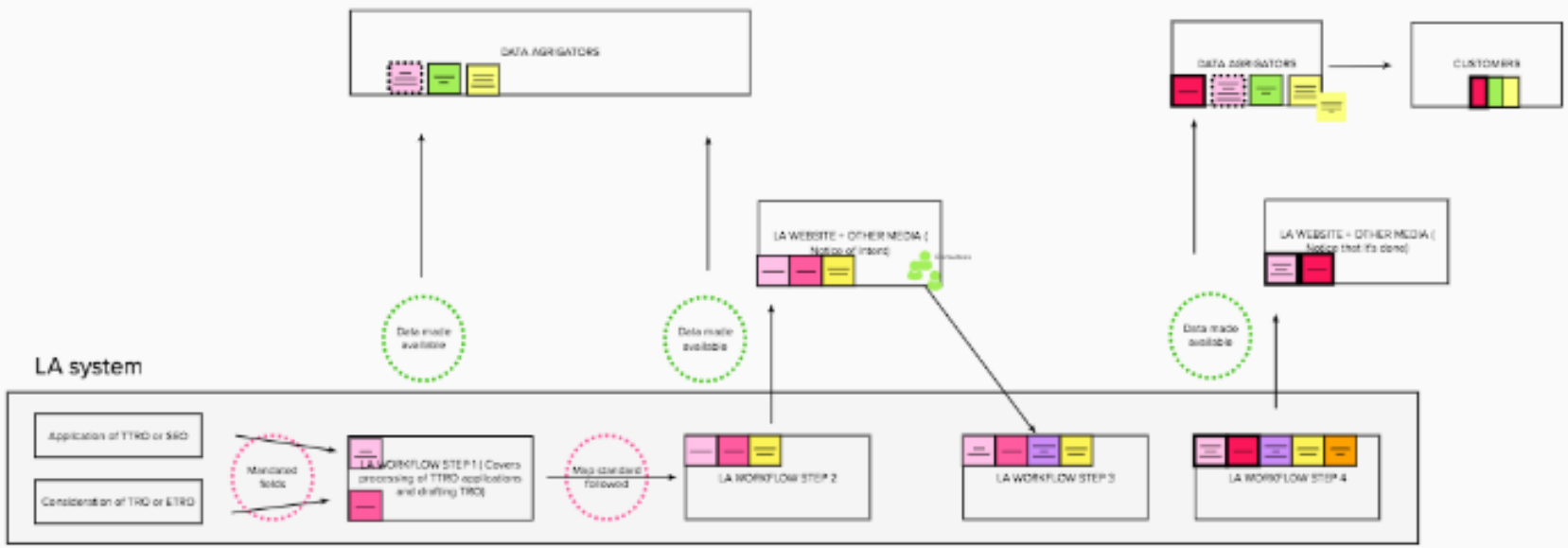

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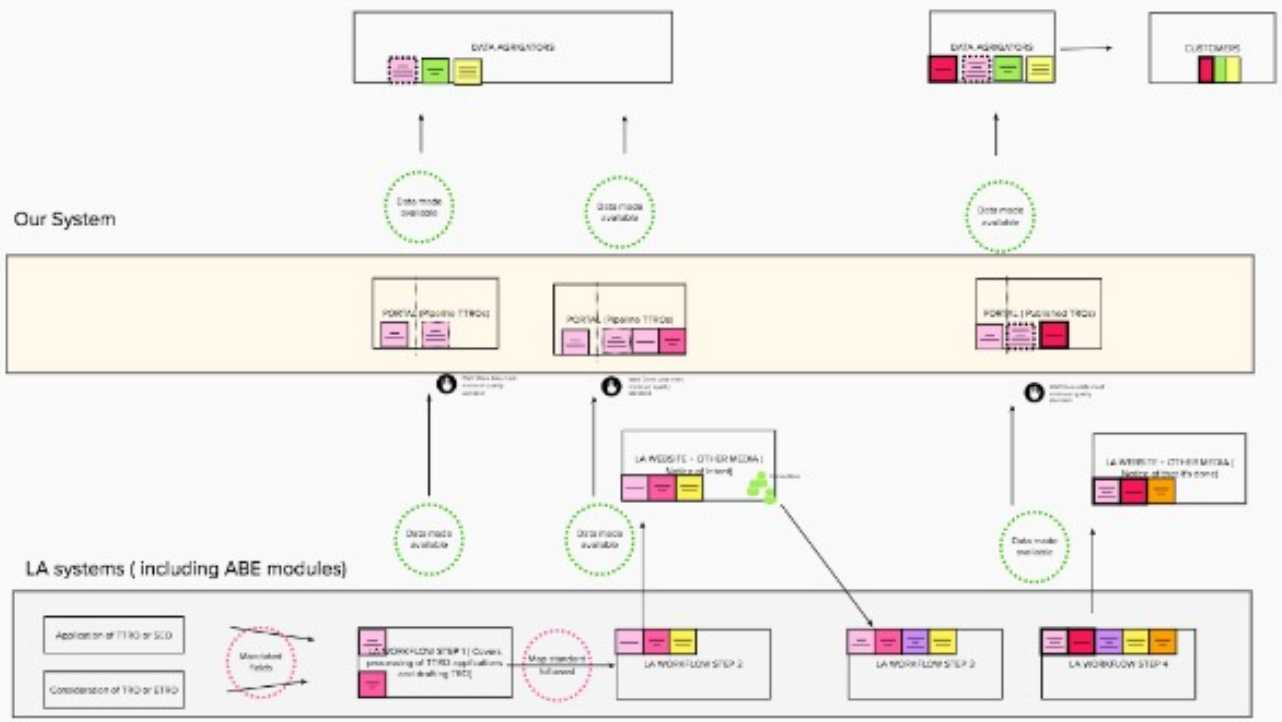

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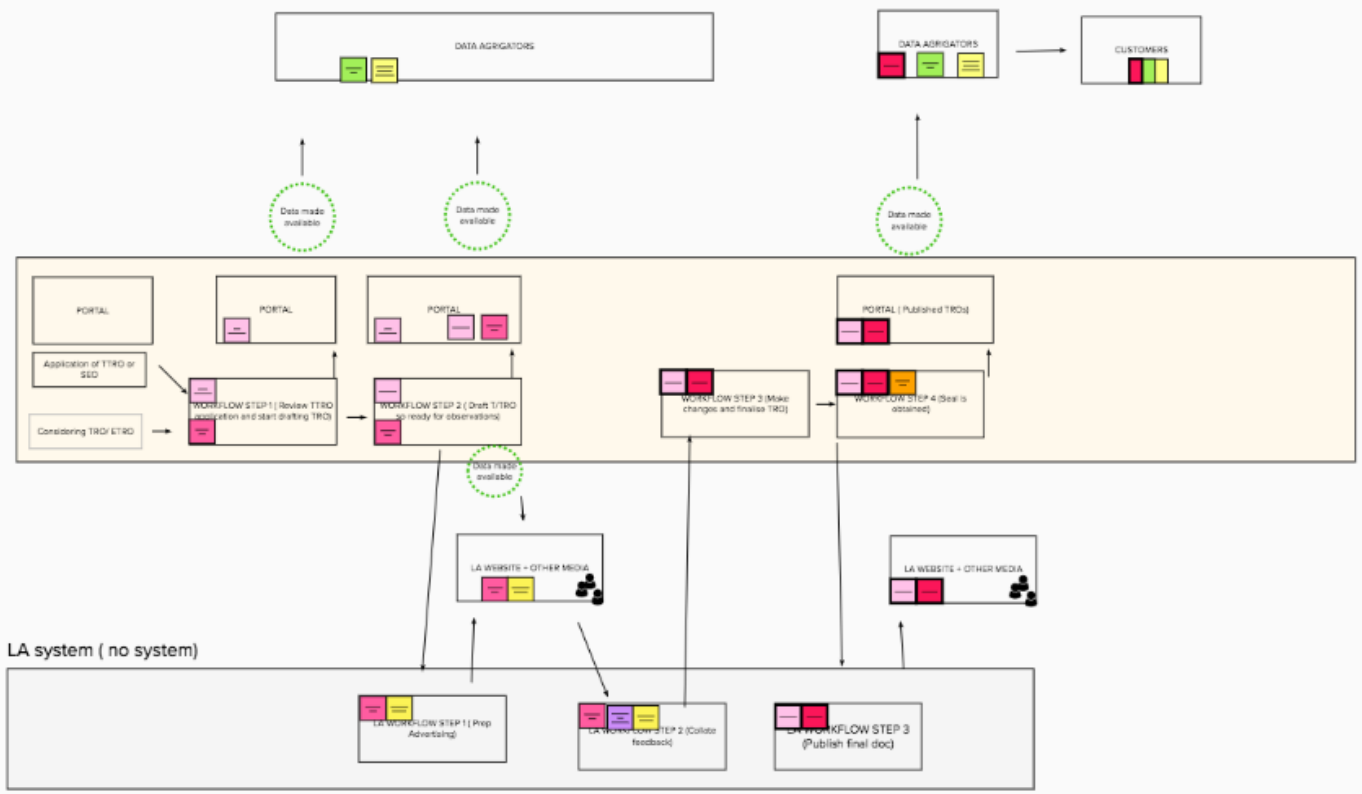
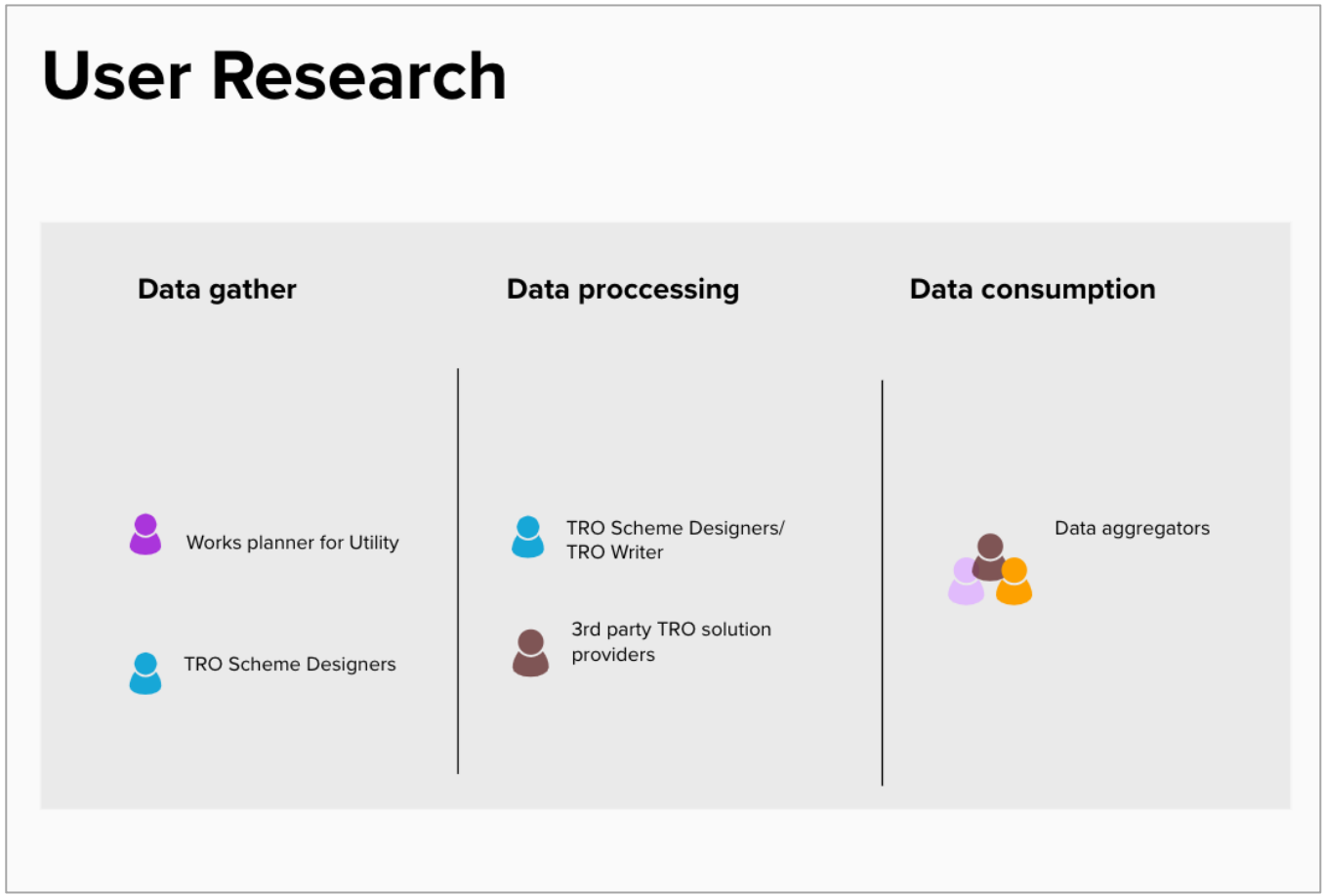


Service Design

Learned more about user needs

Our user research helped us test the assumed needs we had defined earlier in the project and reconsider the service design.



User Research

Data gather

Works planner for Utility

TRO Scheme Designers

Data proccessing

TRO Scheme Designers/
TRO Writer

3rd party TRO solution
providers

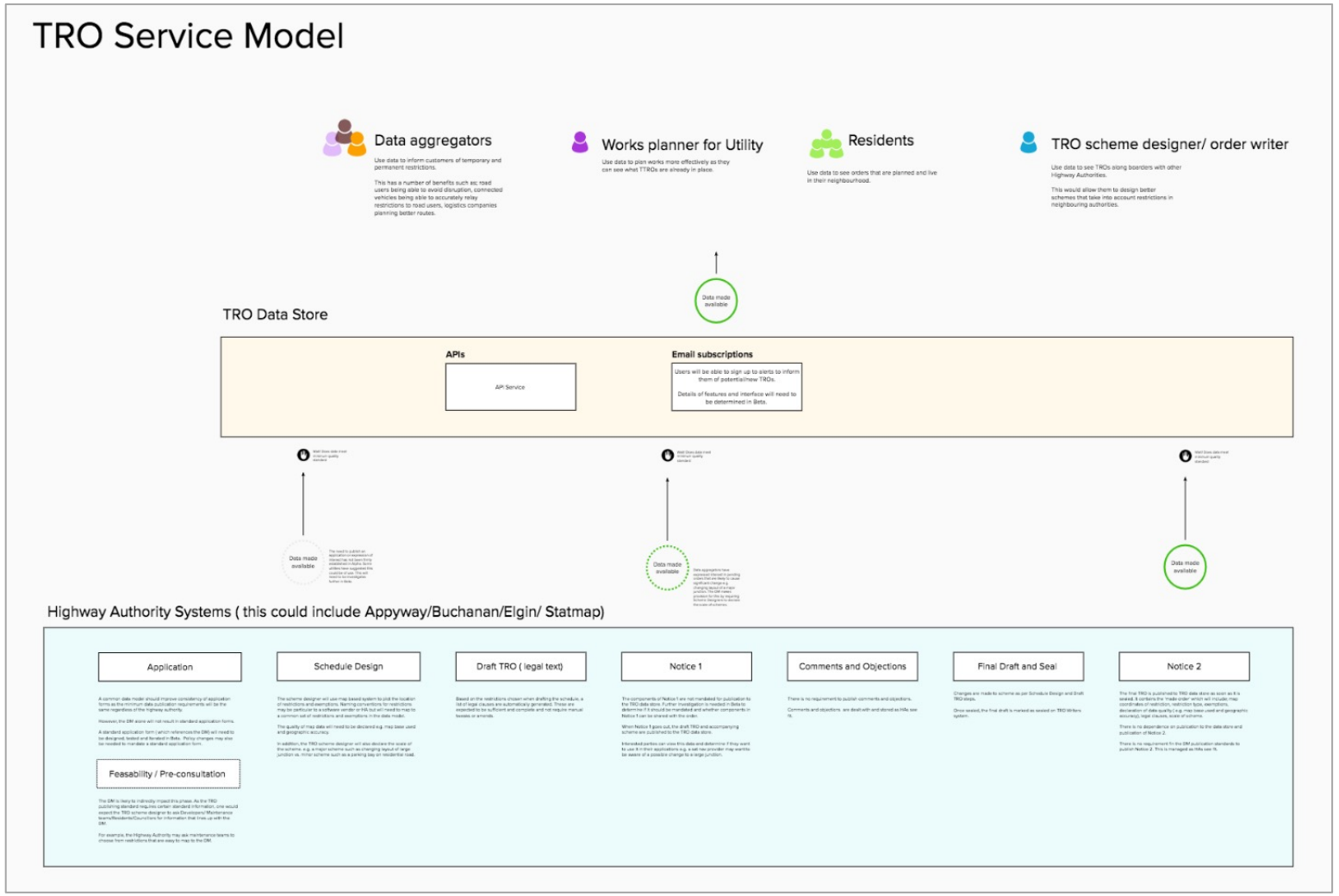
Data consumption

Data aggregators

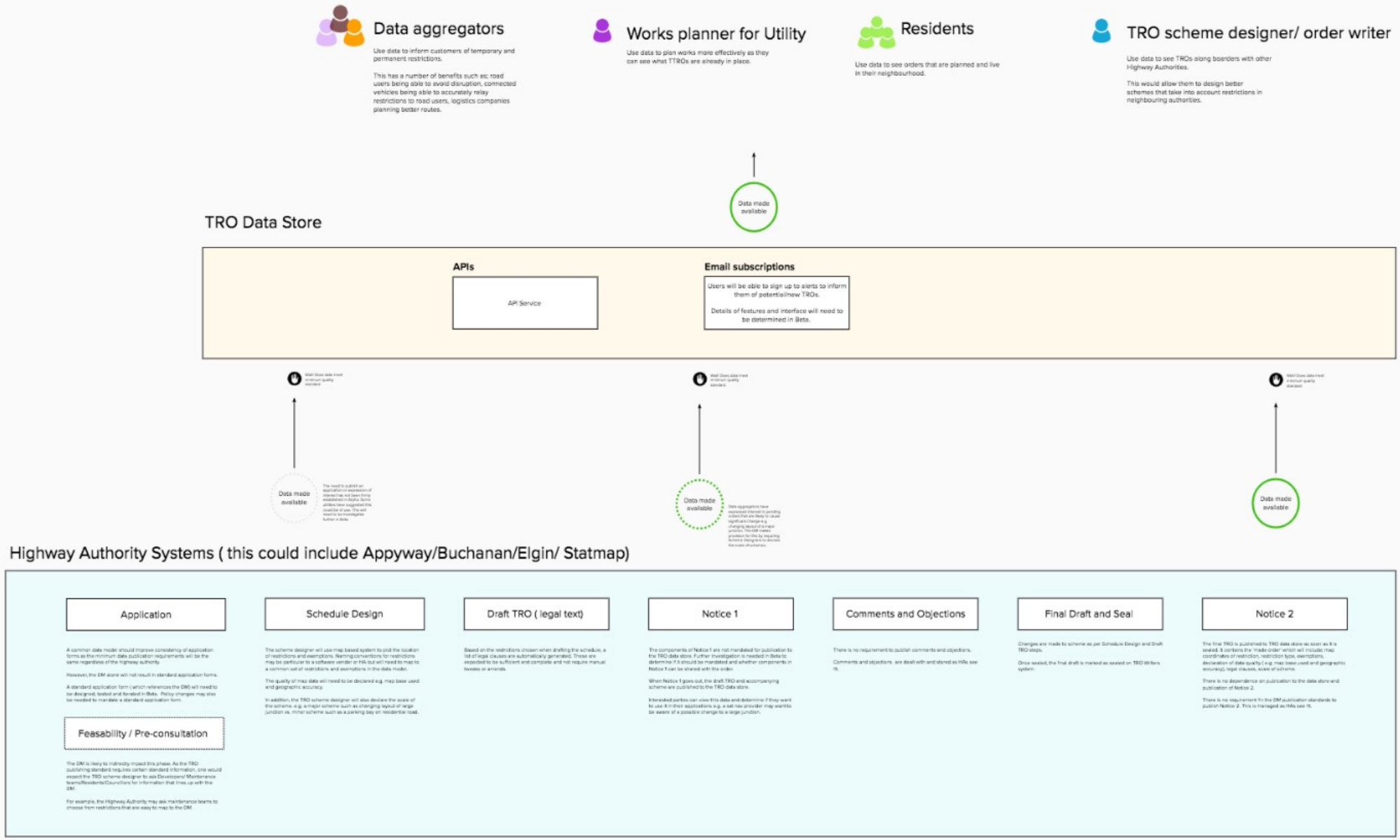
Service Design

Experimenting with different models

The service model evolved into a design that we believe strikes the right balance of enabling the market to develop new and better services and supporting highway authorities to meet their responsibilities.

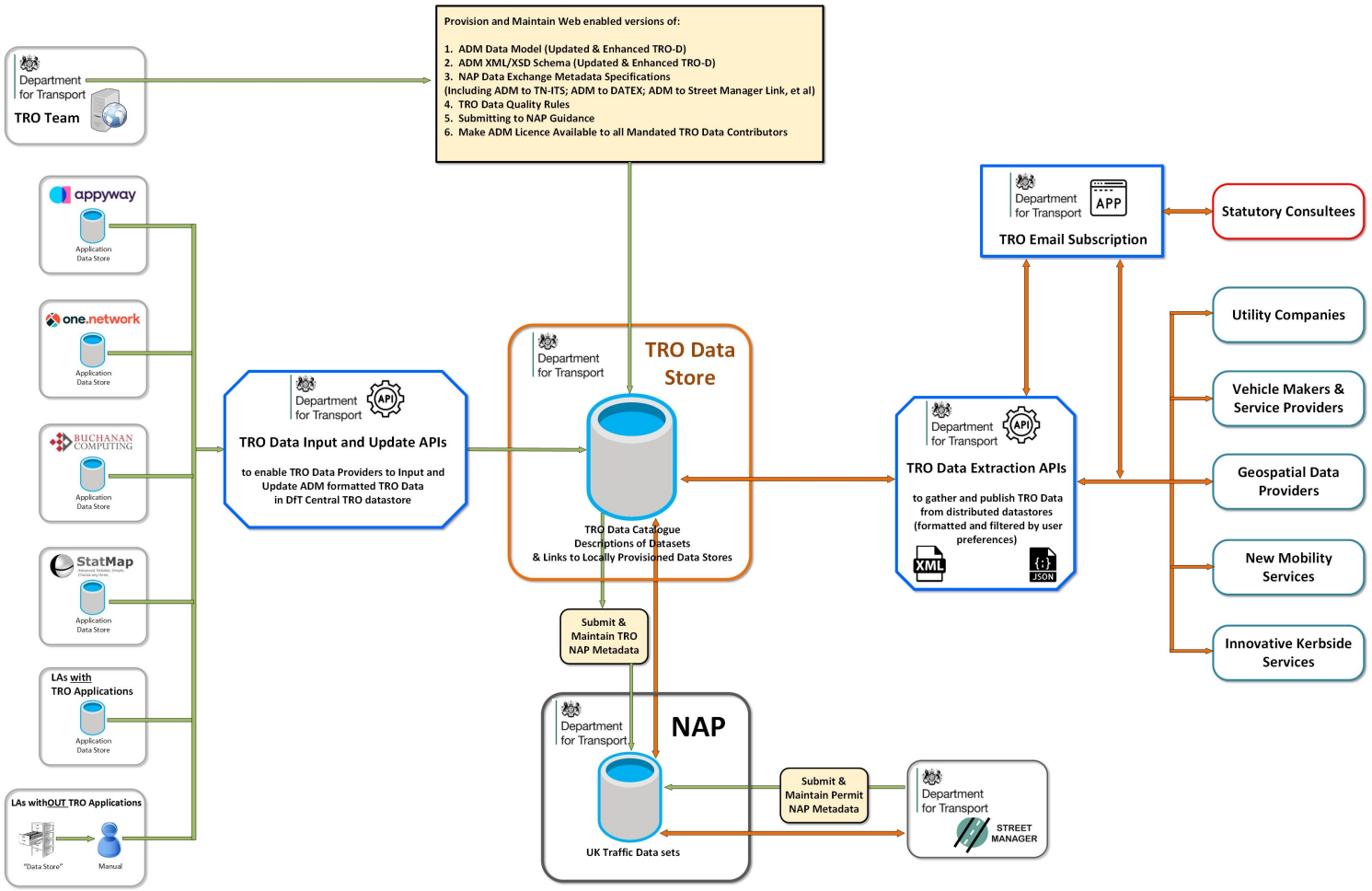
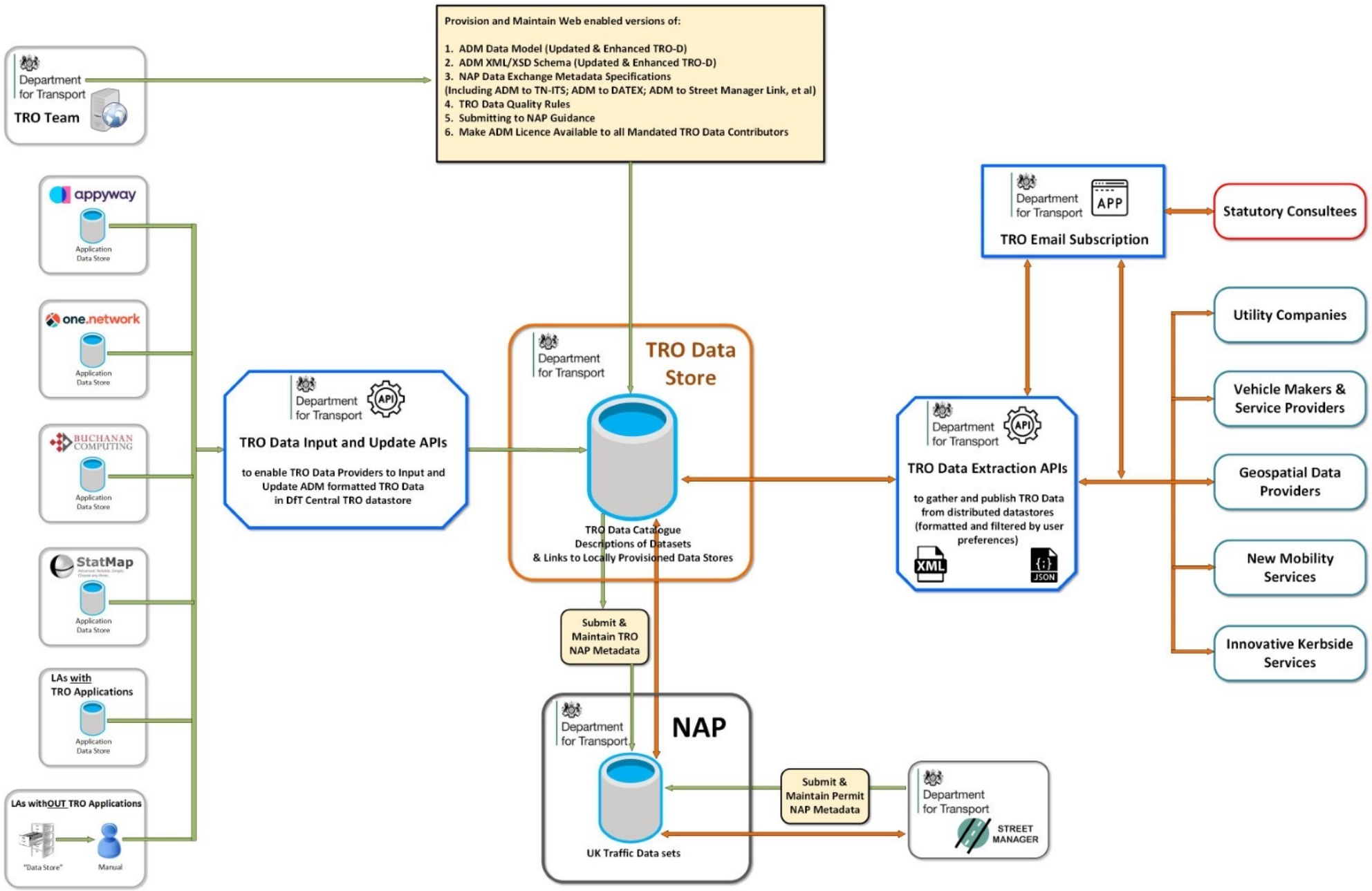


TRO Service Model



Technical Architecture - Solution Architecture Overview

TRO Alpha – Service Option 3 – Centralised Data Store



TRO Alpha – Service Option 3 – Centralised Data Store