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Member of the SNC-Lavalin Group

South East Strategic Reservoir Option

Annex B1: Environmental Assessment Report FIGURES

Thames Water Utilities Limited

14 May 2021

5201137-016

Notice

This document and its contents have been prepared and are intended solely as information for Thames Water Utilities Limited and use in relation to Figures to support Gate 1 Annex B1 Environmental Assessment Reportfor the South East Strategic Reservoir Option, Gate 1 SubmissionFigures to support Gate 1 Annex B1 Environmental Assessment Report

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Document history

Document title: Annex B1: Environmental Assessment Report FIGURES

Document reference: 5201137-016

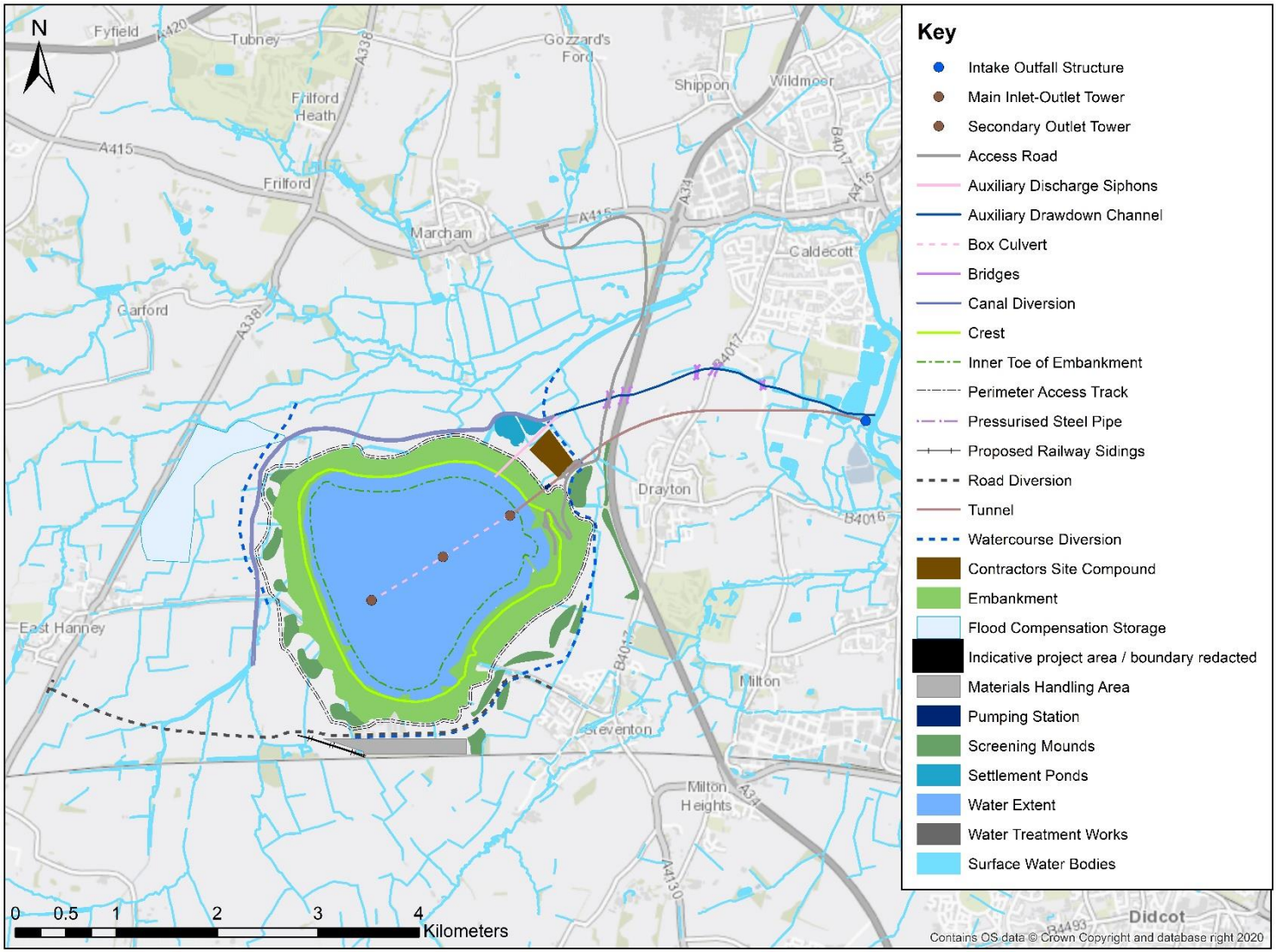
Revision	Purpose description	Origin-ated	Checked	Reviewed	Author-ised	Date
Rev 1.0	Figures to support Gate 1 Annex B1 Environmental Assessment Report	Various	Various	PMU	BA	22/02/21
Rev 2.0	Figures to support final Gate 1 Annex B1 Environmental Assessment Report following update in response to assurance review	Various	Various	PMU	BA	14/05/2021

Client signoff

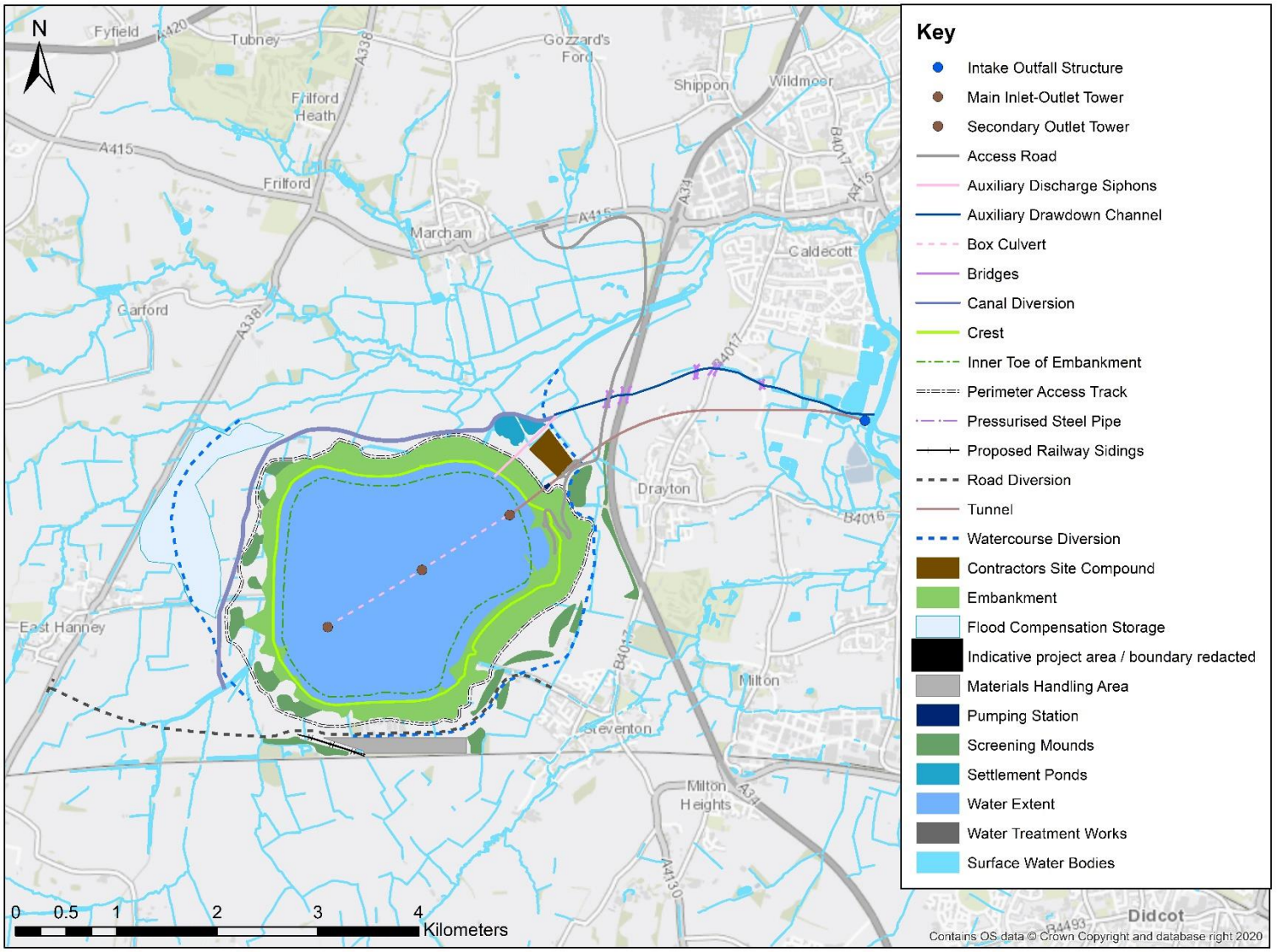
Client	Thames Water Utilities Limited
Project	South East Strategic Reservoir Option
Job number	5201137
Client signature/date	

Contents

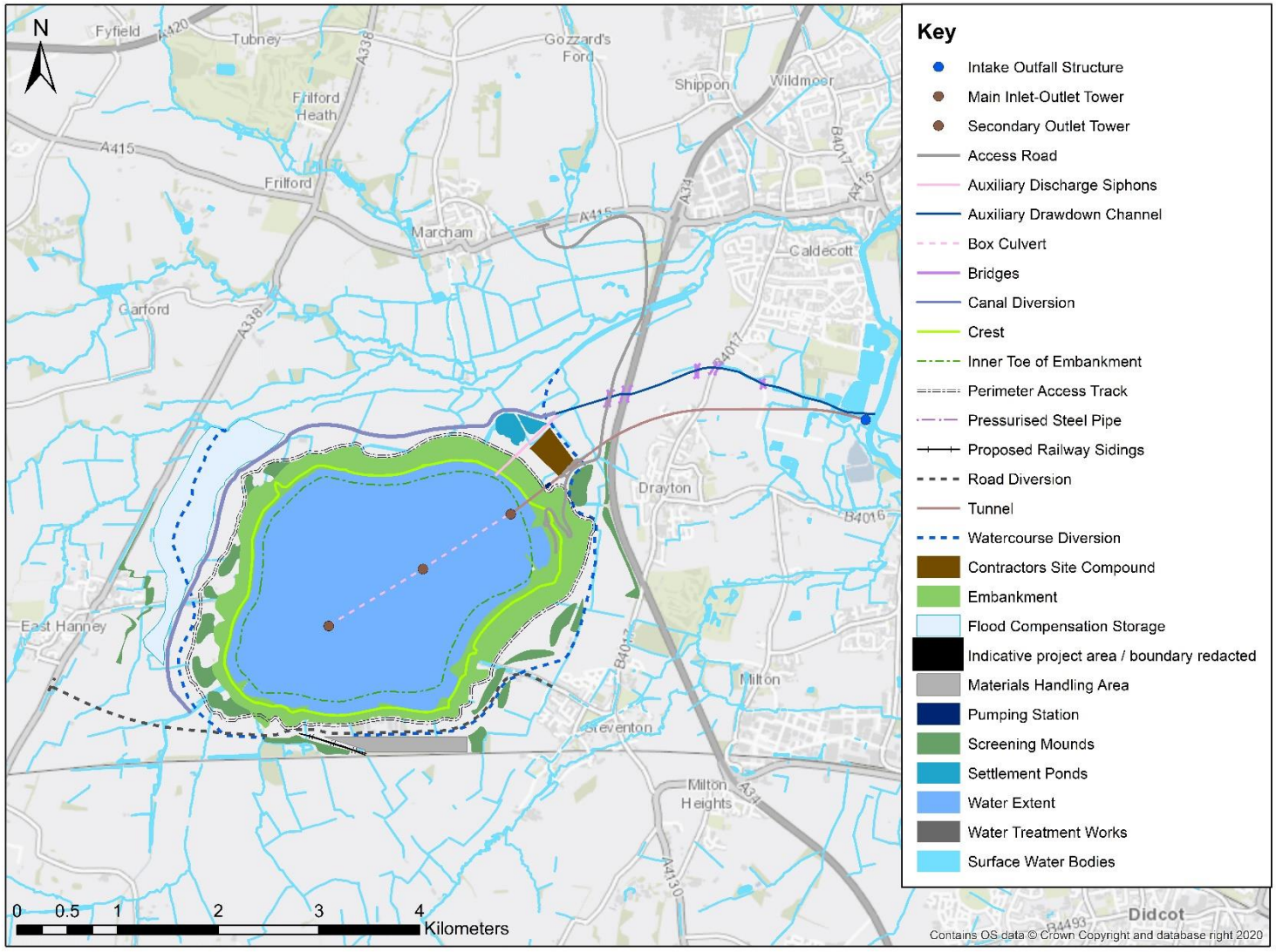
Figure 1.1 Map of Scheme in context of local environs for each option size (showing key features)



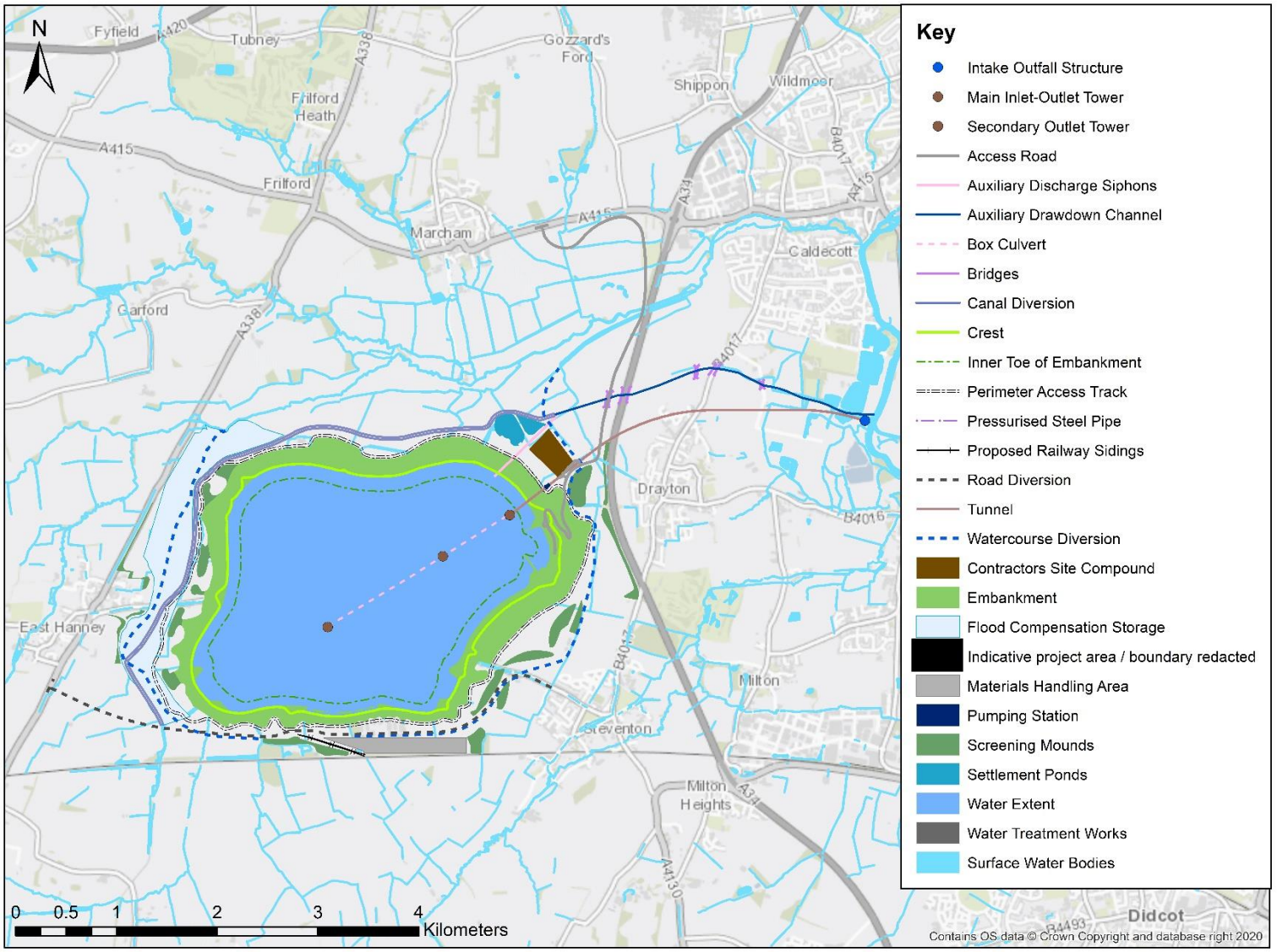
75Mm³ reservoir alternative option layout



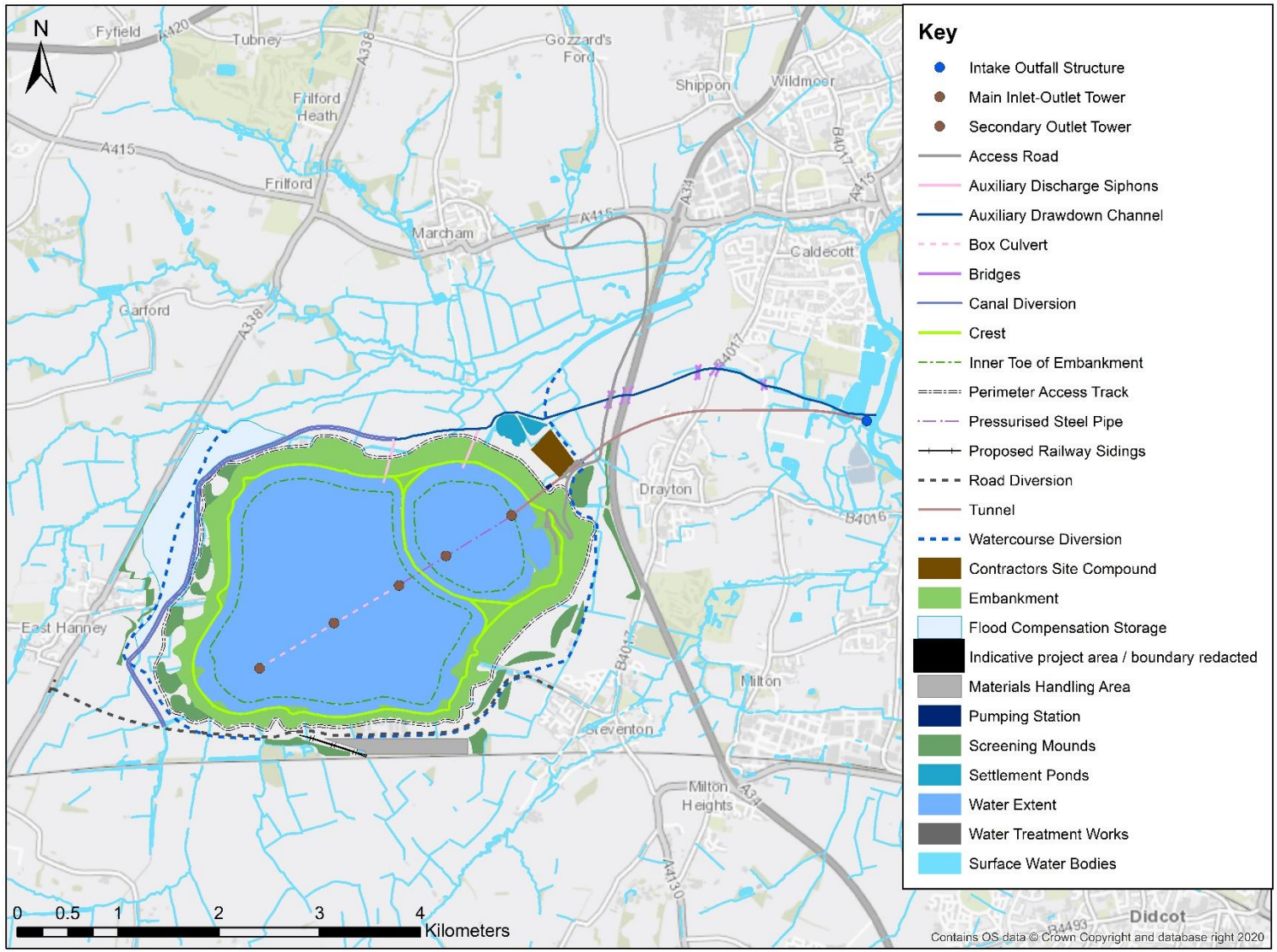
100Mm³ reservoir alternative option layout



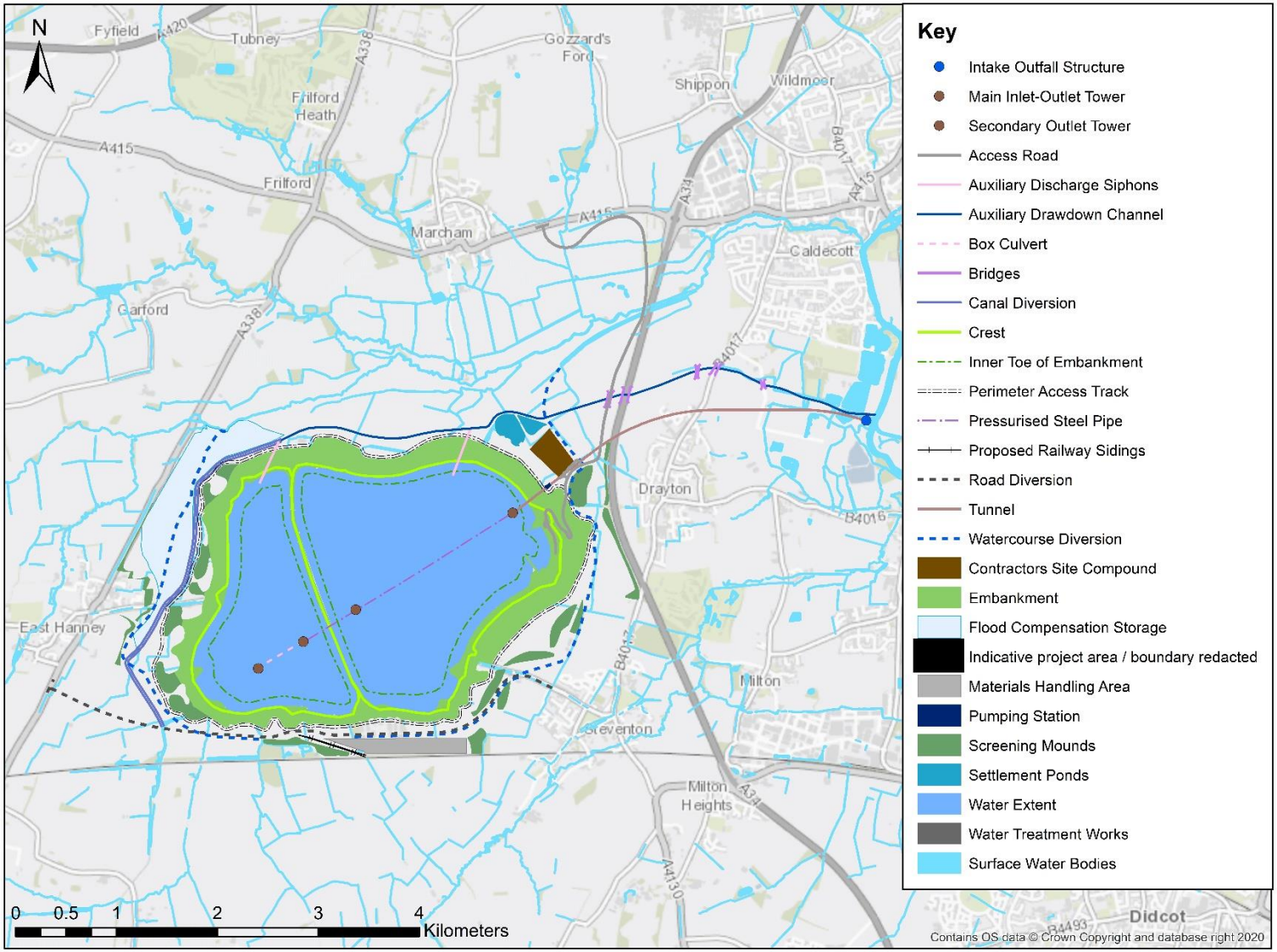
125Mm³ reservoir alternative option layout



150Mm³ reservoir proposed scheme layout



100+30Mm³ reservoir alternative option layout



84+42Mm³ reservoir alternative option layout

Figure 1.2 Map with named rivers

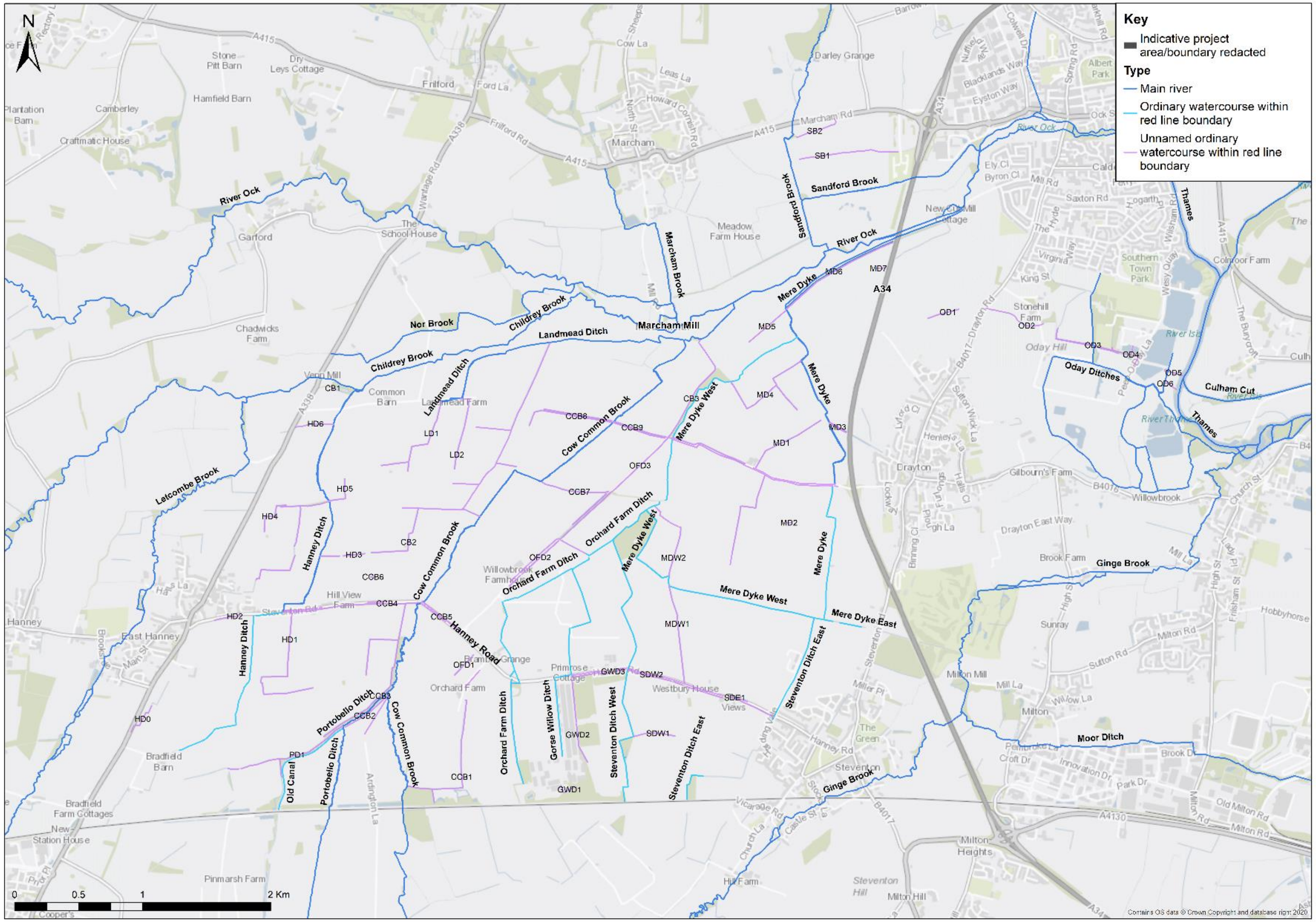
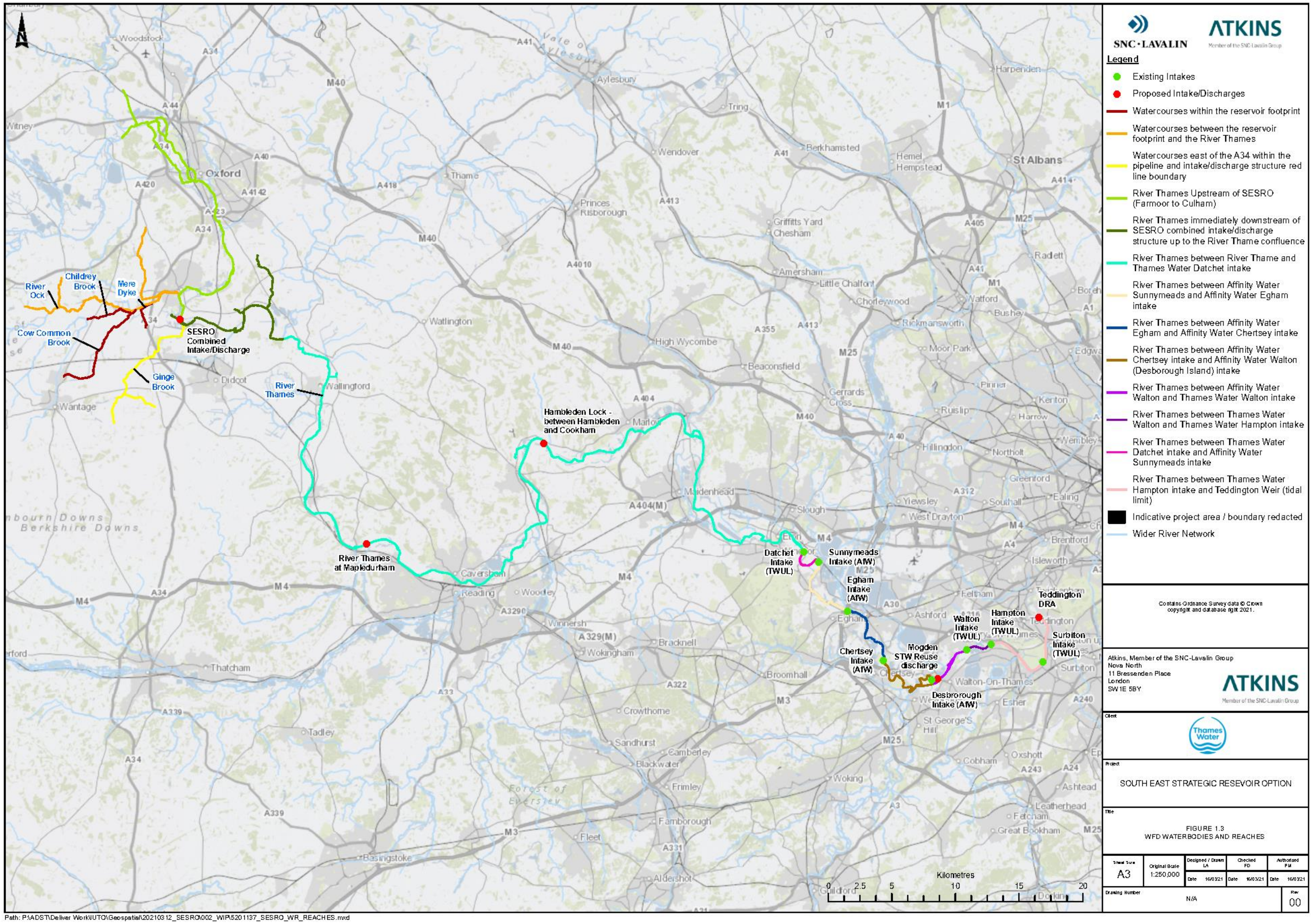

Key
Indicative project area/boundary redacted
Type
Main river
Ordinary watercourse within red line boundary
Unnamed ordinary watercourse within red line boundary
N
0
0.5
1
2 Km
River Ock
Nor Brook
Childrey Brook
Landmead Ditch
Marcham Mill
Marcham Brook
Sandford Brook
Mere Dyke
Mere Dyke West
Mere Dyke East
Cow Common Brook
Orchard Farm Ditch
Letcombe Brook
Hanney Ditch
Hanney Road
Portobello Ditch
Old Canal
Orchard Farm Ditch
Gorse Willow Ditch
Steventon Ditch West
Steventon Ditch East
Ginge Brook
Moor Ditch
Oday Ditches
Culham Cut
Thames
A34
Contains OS data © Crown Copyright and database right 2020

Figure 1.3 WFD waterbodies and river reaches


SNC·LAVALIN
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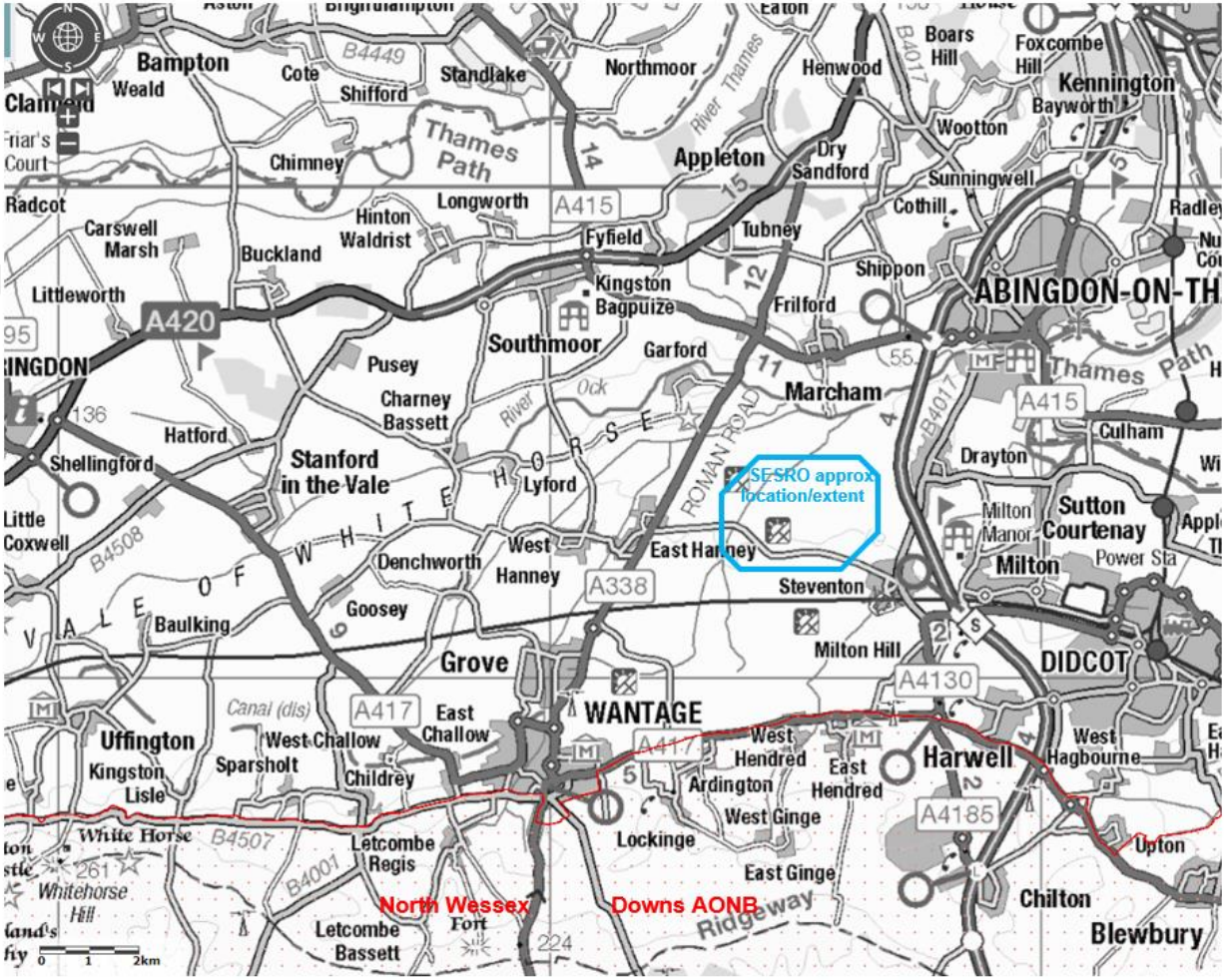
Legend
Existing Intakes
Proposed Intake/Discharges
Watercourses within the reservoir footprint
Watercourses between the reservoir footprint and the River Thames
Watercourses east of the A34 within the pipeline and intake/discharge structure red line boundary
River Thames Upstream of SESRO (Farmoor to Culham)
River Thames immediately downstream of SESRO combined intake/discharge structure up to the River Thame confluence
River Thames between River Thame and Thames Water Datchet intake
River Thames between Affinity Water Sunnymeads and Affinity Water Egham intake
River Thames between Affinity Water Egham and Affinity Water Chertsey intake
River Thames between Affinity Water Chertsey intake and Affinity Water Walton (Desborough Island) intake
River Thames between Affinity Water Walton and Thames Water Walton intake
River Thames between Thames Water Walton and Thames Water Hampton intake
River Thames between Thames Water Datchet intake and Affinity Water Sunnymeads intake
River Thames between Thames Water Hampton intake and Teddington Weir (tidal limit)
Indicative project area / boundary redacted
Wider River Network
River Ock
Childrey Brook
Mere Dyke
Cow Common Brook
Ginge Brook
SESRO Combined Intake/Discharge
River Thames
Hambleden Lock - between Hambleden and Cookham
River Thames at Mapledurham
Datchet Intake (TWUL)
Sunnymeads Intake (AfW)
Egham Intake (AfW)
Chertsey Intake (AfW)
Mogden STW Reuse discharge
Desborough Intake (AfW)
Walton Intake (TWUL)
Hampton Intake (TWUL)
Teddington DRA
Surbiton Intake (TWUL)
Oxford
Reading
Kilometres
0 2.5 5 10 15 20
Contains Ordnance Survey data © Crown copyright and database right 2021.
Atkins, Member of the SNC-Lavalin Group
Nova North
11 Bressenden Place
London
SW1E 5BY
Thames Water
SOUTH EAST STRATEGIC RESEVOIR OPTION
FIGURE 1.3
WFD WATERBODIES AND REACHES
A3
1:250,000
N/A
00
Path: P:\ADST\Deliver Work\UTO\Geospatial\20210312_SESRO\002_WIP\5201137_SESRO_WR_REACHES.mxd

Figure 2.1 Location Plan – SESRO (Abingdon Reservoir option) and North Wessex Downs AONB



Source: MAGIC Map Application

Figure 5.1 SESRO Conceptual Model

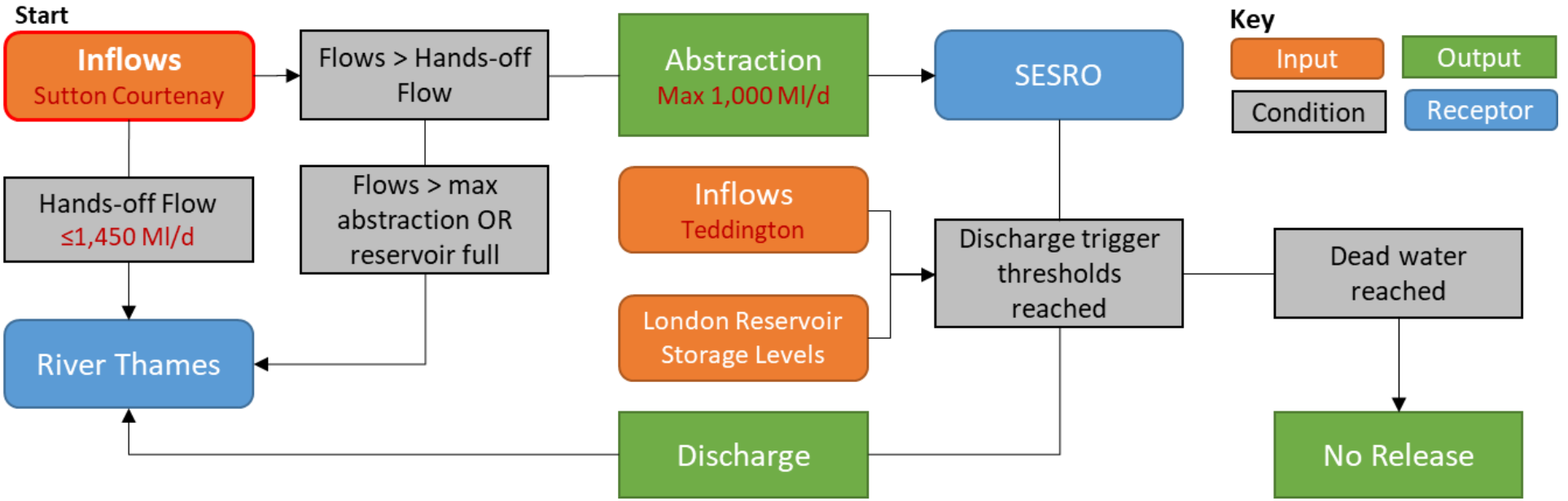

Start
Inflows
Sutton Courtenay
Flows > Hands-off Flow
Abstraction
Max 1,000 Ml/d
SESRO
Key
Input
Output
Condition
Receptor
Hands-off Flow
≤1,450 Ml/d
Flows > max abstraction OR reservoir full
Inflows
Teddington
Discharge trigger thresholds reached
Dead water reached
River Thames
London Reservoir Storage Levels
Discharge
No Release

Figure 5.2 Modelled versus Actual inflow timeseries data at Sutton Courtenay

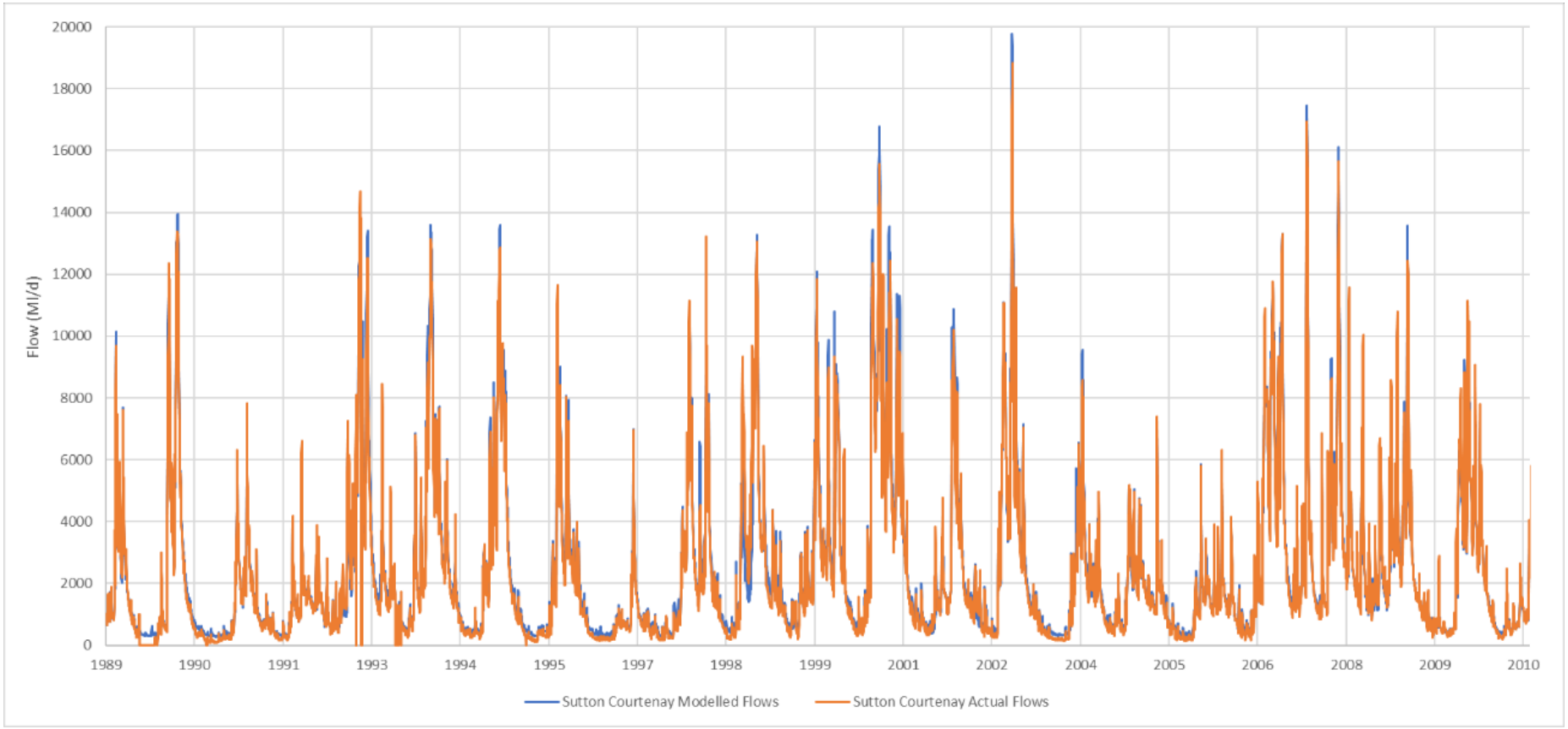

20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Flow (Ml/d)
1989
1990
1991
1993
1994
1995
1997
1998
1999
2001
2002
2004
2005
2006
2008
2009
2010
Sutton Courtenay Modelled Flows
Sutton Courtenay Actual Flows

Figure 5.3 Modelled versus actual inflow timeseries data at Teddington

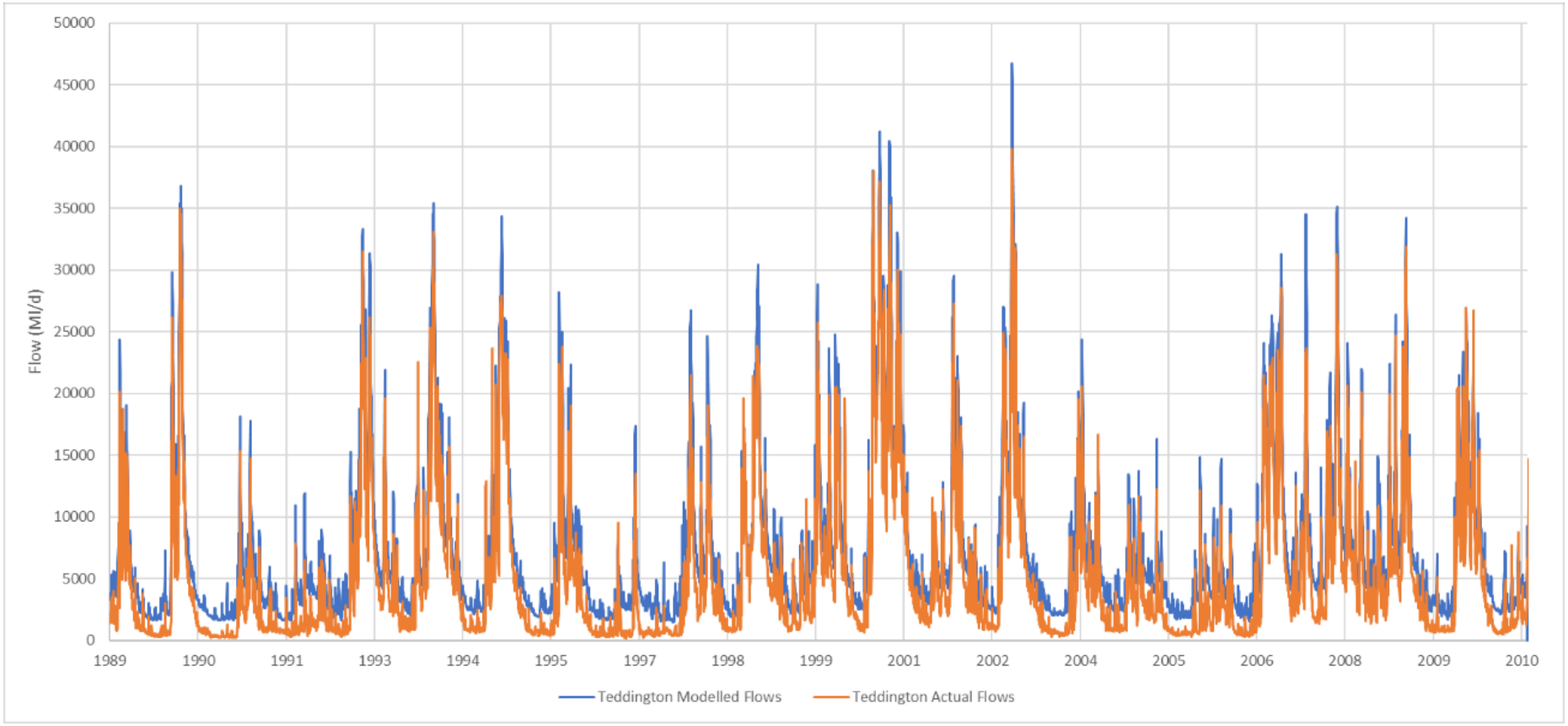

50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Flow (Ml/d)
1989
1990
1991
1993
1994
1995
1997
1998
1999
2001
2002
2004
2005
2006
2008
2009
2010
Teddington Modelled Flows
Teddington Actual Flows

Figure 5.4 Modelled versus actual London reservoir storage levels

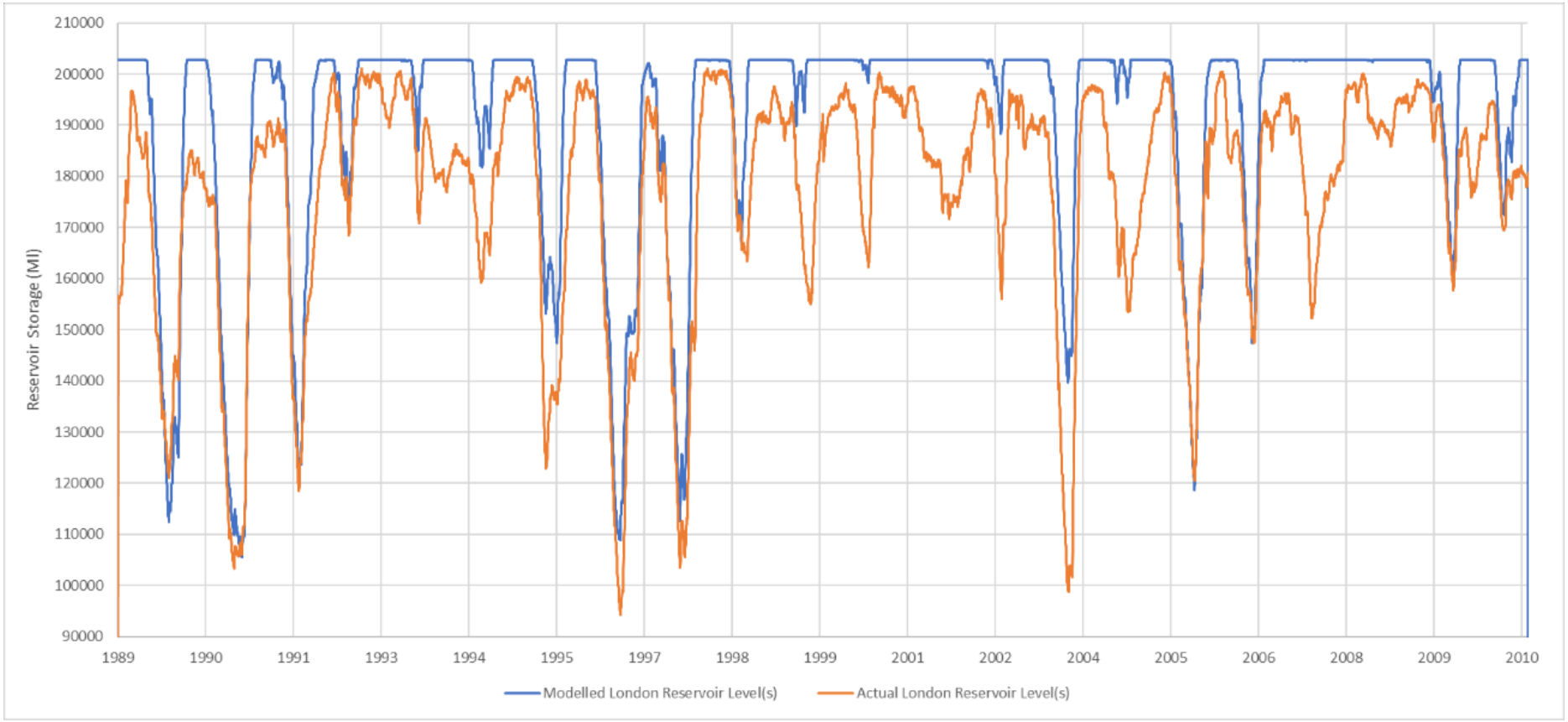
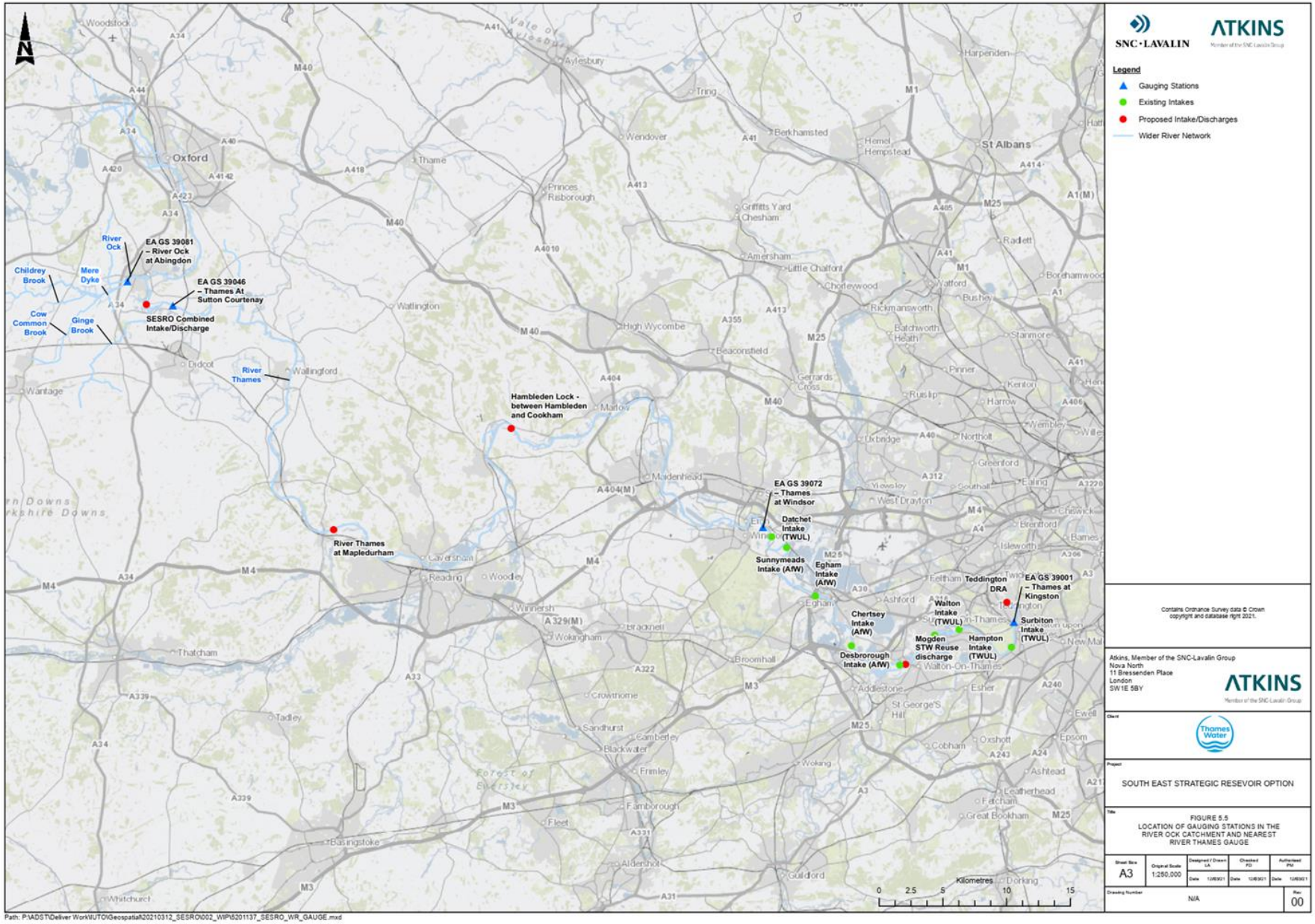

Reservoir Storage (Ml)
210000
200000
190000
180000
170000
160000
150000
140000
130000
120000
110000
100000
90000
1989
1990
1991
1993
1994
1995
1997
1998
1999
2001
2002
2004
2005
2006
2008
2009
2010
Modelled London Reservoir Level(s)
Actual London Reservoir Level(s)

Figure 5.5 Location of gauging stations in the River Ock catchment and nearest River Thames gauge


River Ock
EA GS 39081 – River Ock at Abingdon
Childrey Brook
Mere Dyke
EA GS 39046 – Thames At Sutton Courtenay
Cow Common Brook
Ginge Brook
SESRO Combined Intake/Discharge
River Thames
Hambleden Lock - between Hambleden and Cookham
River Thames at Mapledurham
EA GS 39072 – Thames at Windsor
Datchet Intake (TWUL)
Sunnymeads Intake (AfW)
Egham Intake (AfW)
Chertsey Intake (AfW)
Desbrorough Intake (AfW)
Mogden STW Reuse discharge
Walton Intake (TWUL)
Hampton Intake (TWUL)
Teddington DRA
Surbiton Intake (TWUL)
EA GS 39001 – Thames at Kingston
Oxford
Reading
Basingstoke
Guildford
St Albans
Kilometres
0 2.5 5 10 15
Legend
Gauging Stations
Existing Intakes
Proposed Intake/Discharges
Wider River Network
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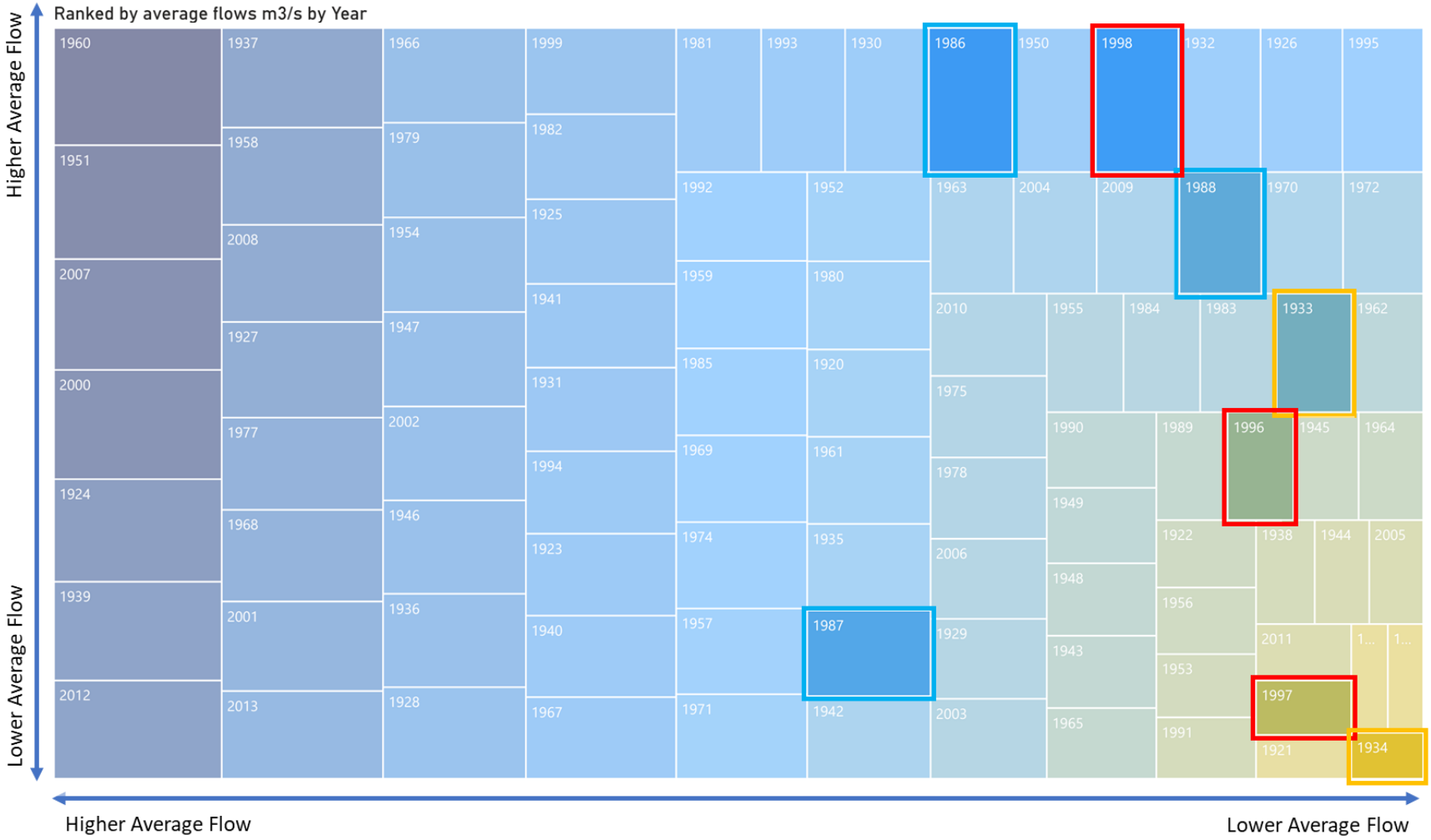
London
SW1E 5BY
Thames Water
SOUTH EAST STRATEGIC RESEVOIR OPTION
FIGURE 5.5
LOCATION OF GAUGING STATIONS IN THE RIVER OCK CATCHMENT AND NEAREST RIVER THAMES GAUGE
Sheet Size A3
Original Scale 1:250,000
Designed / Drawn LA
Checked PD
Authorised PM
Date 12/03/21
Drawing Number N/A
Rev. 00
Path: P:\ADST\Deliver Work\UTO\Geospatial\20210312_SESRO\002_WIP\5201137_SESRO_WR_GAUGE.mxd

Figure 5.6 Illustration of average daily flows per year across modelled inflow record



Note. Size of box is proportional to the average annual flows for that year.
Key:
Blue - typical non-drought year
Red - typical drought year
Yellow - extreme drought

Figure 5.7 Flow Duration Curve for all options all years (1920–2010)

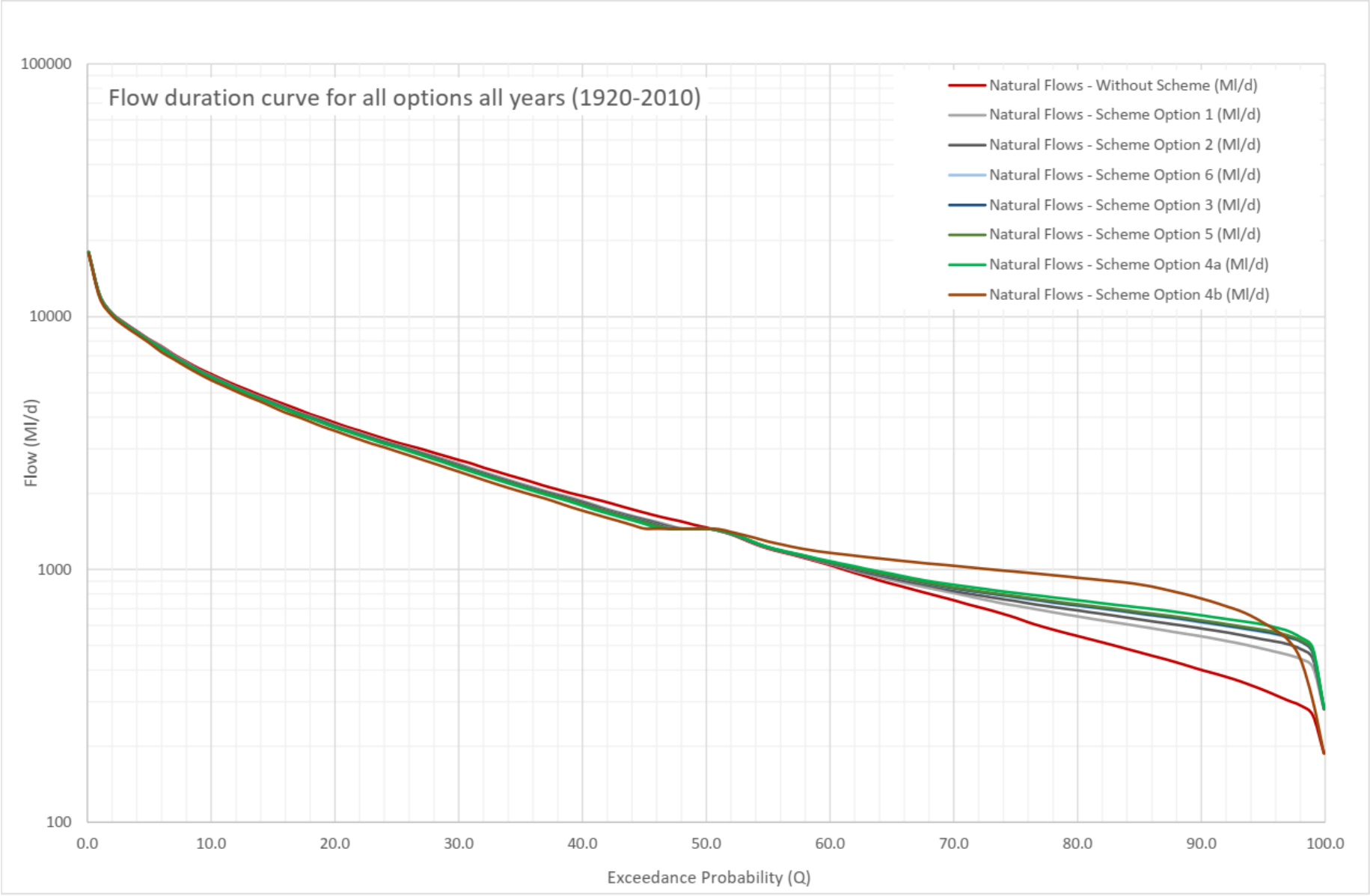

Flow duration curve for all options all years (1920-2010)
Natural Flows - Without Scheme (Ml/d)
Natural Flows - Scheme Option 1 (Ml/d)
Natural Flows - Scheme Option 2 (Ml/d)
Natural Flows - Scheme Option 6 (Ml/d)
Natural Flows - Scheme Option 3 (Ml/d)
Natural Flows - Scheme Option 5 (Ml/d)
Natural Flows - Scheme Option 4a (Ml/d)
Natural Flows - Scheme Option 4b (Ml/d)
100000
10000
1000
100
Flow (Ml/d)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Exceedance Probability (Q)

Figure 5.8 Flow Duration Curve for all options typical non-drought period (1986–88)

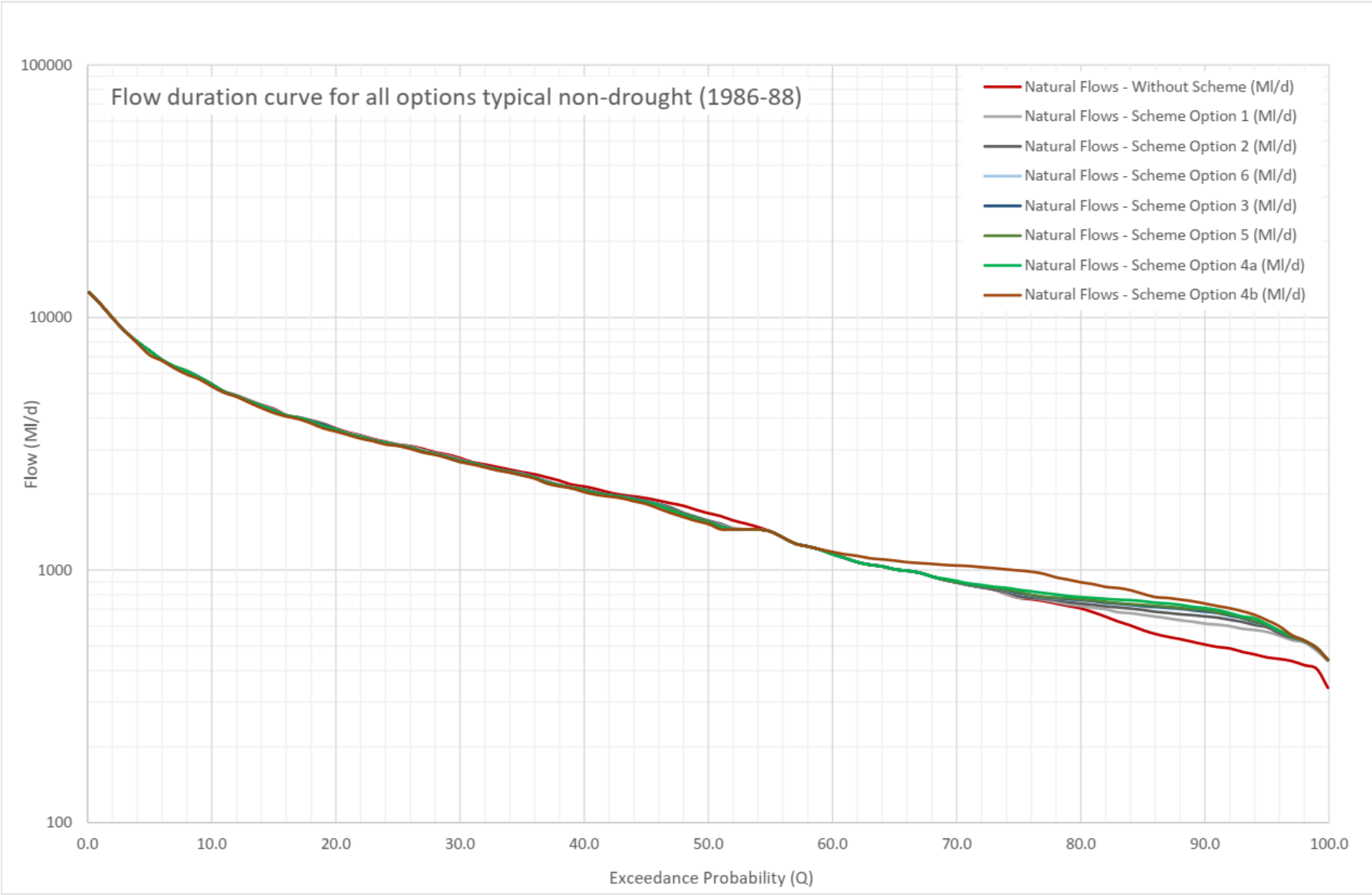

Flow duration curve for all options typical non-drought (1986-88)
Natural Flows - Without Scheme (Ml/d)
Natural Flows - Scheme Option 1 (Ml/d)
Natural Flows - Scheme Option 2 (Ml/d)
Natural Flows - Scheme Option 6 (Ml/d)
Natural Flows - Scheme Option 3 (Ml/d)
Natural Flows - Scheme Option 5 (Ml/d)
Natural Flows - Scheme Option 4a (Ml/d)
Natural Flows - Scheme Option 4b (Ml/d)
100000
10000
1000
100
Flow (Ml/d)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Exceedance Probability (Q)

Figure 5.9 Flow Duration Curve for all options typical drought period (1996–98)

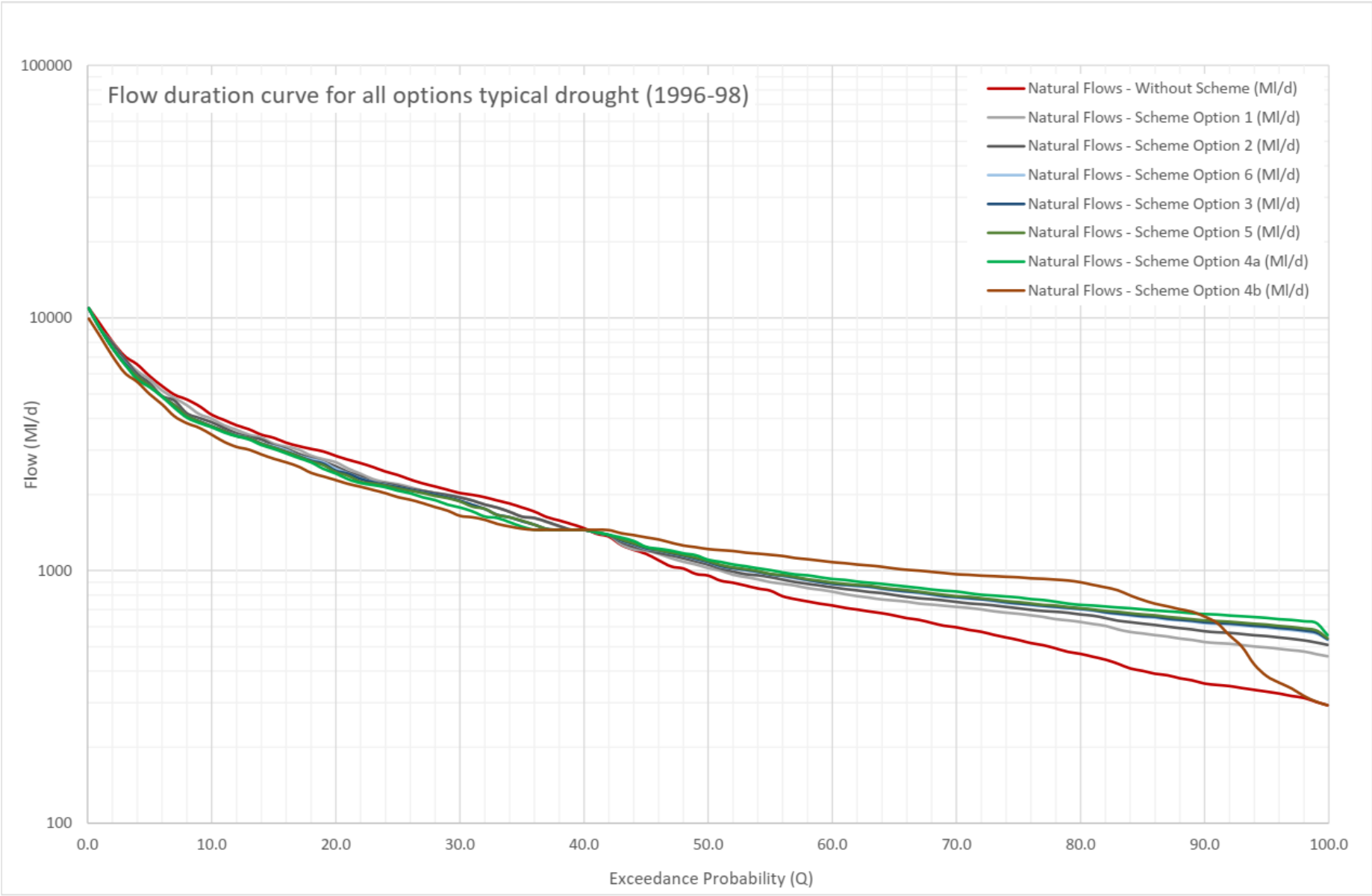

Flow duration curve for all options typical drought (1996-98)
Natural Flows - Without Scheme (Ml/d)
Natural Flows - Scheme Option 1 (Ml/d)
Natural Flows - Scheme Option 2 (Ml/d)
Natural Flows - Scheme Option 6 (Ml/d)
Natural Flows - Scheme Option 3 (Ml/d)
Natural Flows - Scheme Option 5 (Ml/d)
Natural Flows - Scheme Option 4a (Ml/d)
Natural Flows - Scheme Option 4b (Ml/d)
100000
10000
1000
100
Flow (Ml/d)
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Exceedance Probability (Q)

Figure 5.10 Flow Duration Curve for all options extreme drought period (1933–34)

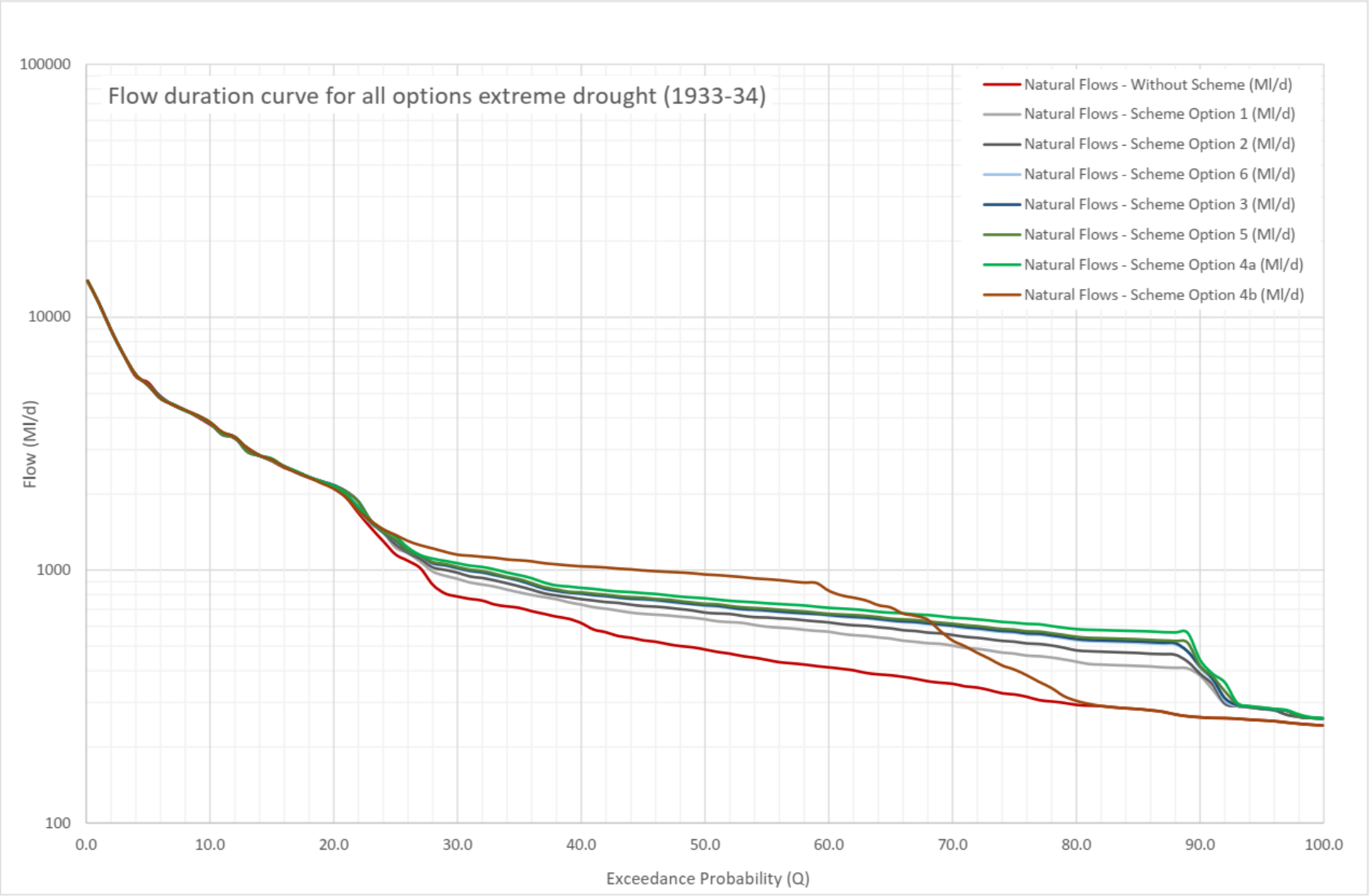
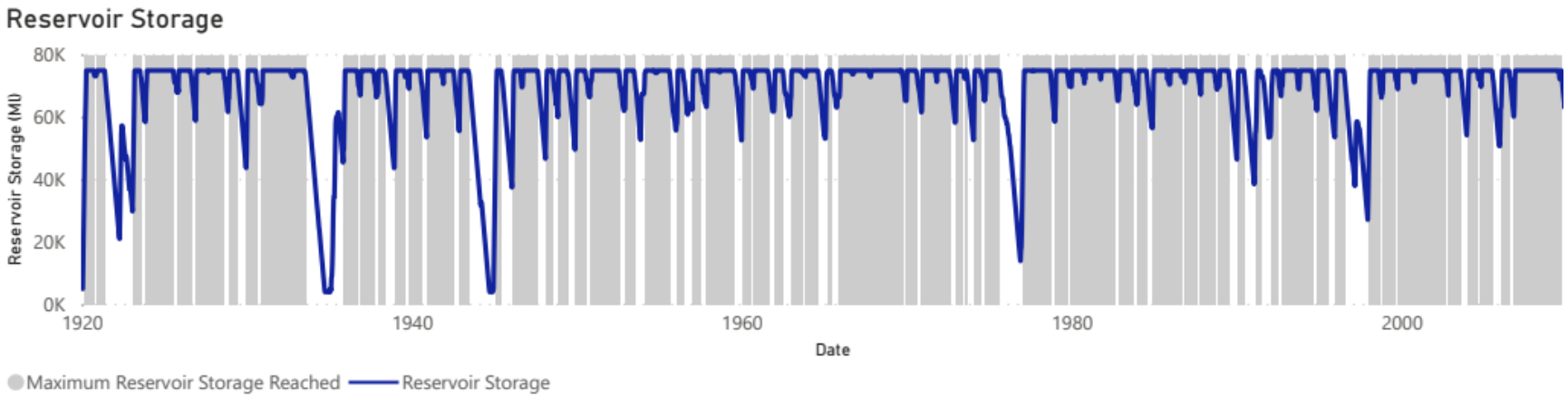
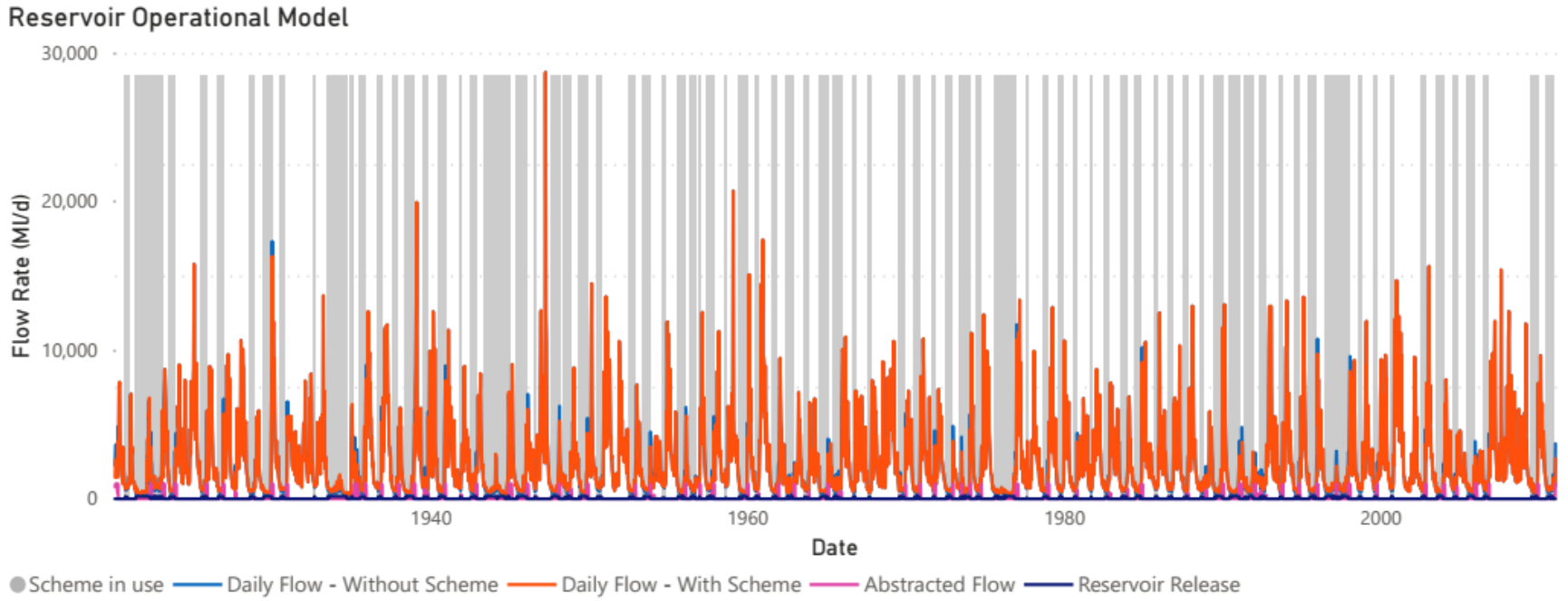
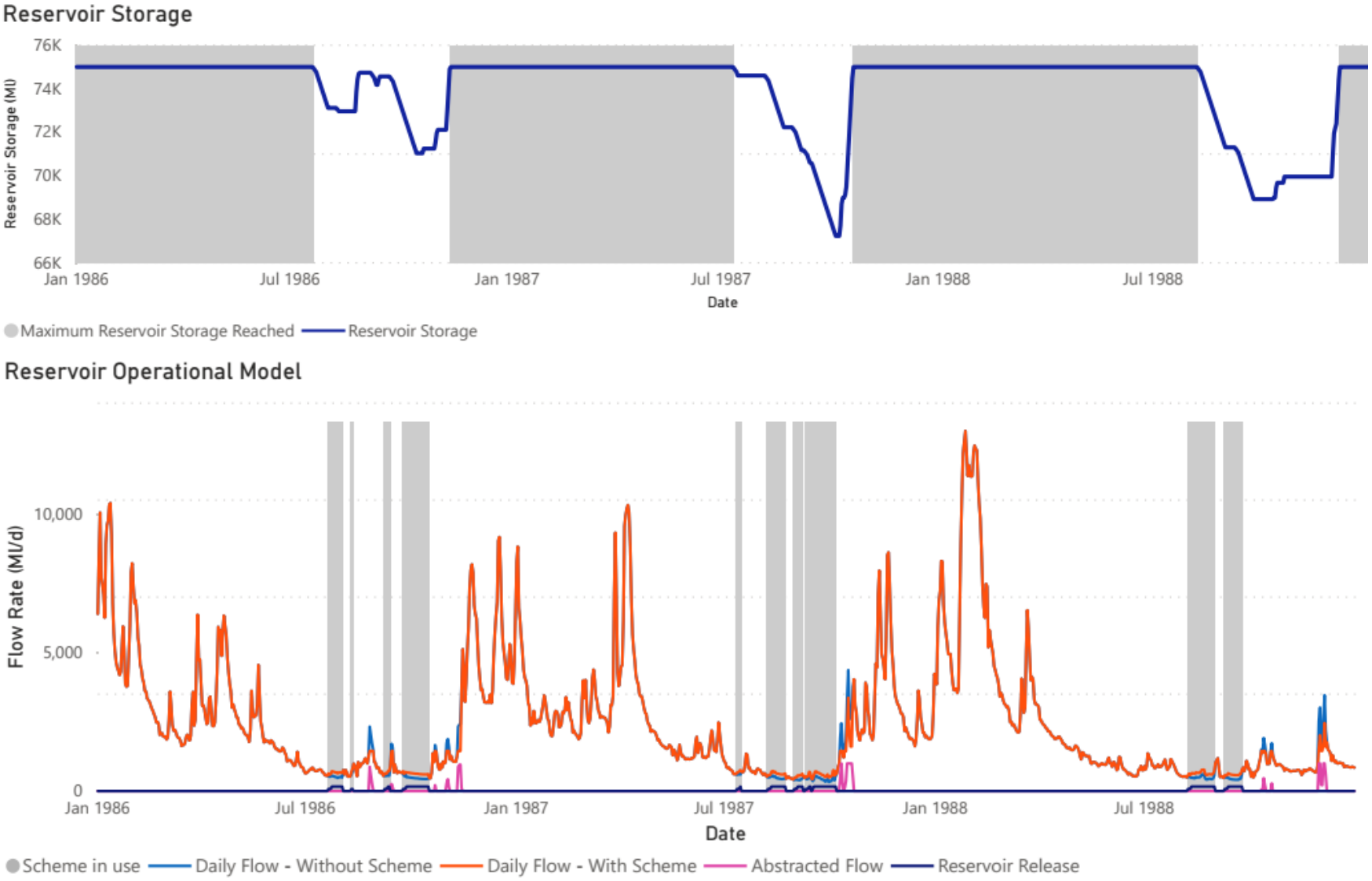

Flow duration curve for all options extreme drought (1933-34)
Natural Flows - Without Scheme (Ml/d)
Natural Flows - Scheme Option 1 (Ml/d)
Natural Flows - Scheme Option 2 (Ml/d)
Natural Flows - Scheme Option 6 (Ml/d)
Natural Flows - Scheme Option 3 (Ml/d)
Natural Flows - Scheme Option 5 (Ml/d)
Natural Flows - Scheme Option 4a (Ml/d)
Natural Flows - Scheme Option 4b (Ml/d)
Flow (Ml/d)
100000
10000
1000
100
0.0
10.0
20.0
30.0
40.0
50.0
60.0
70.0
80.0
90.0
100.0
Exceedance Probability (Q)

Figure 5.11 Hydrological operational regime

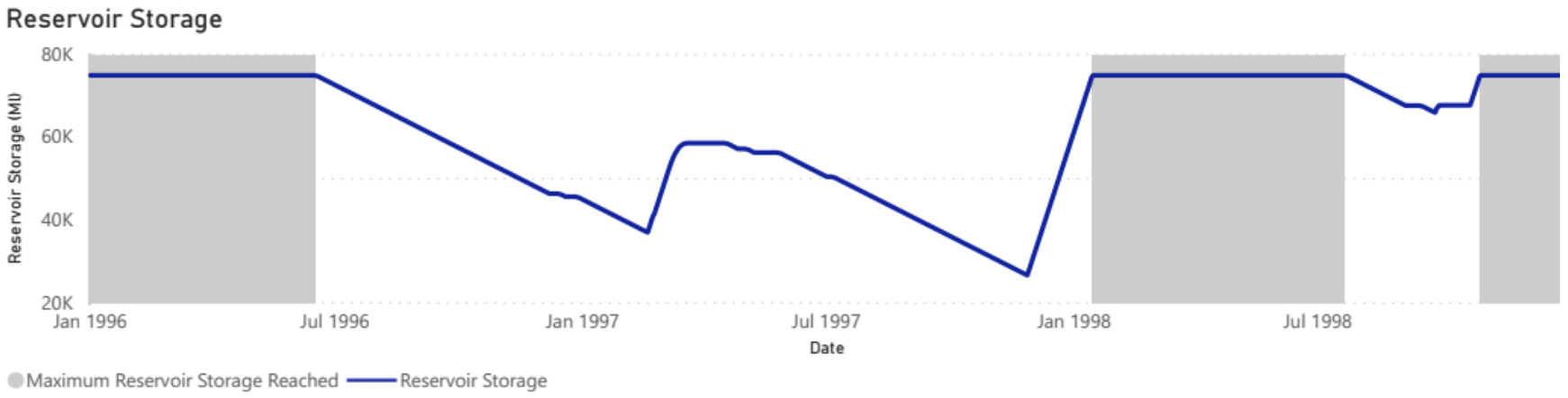


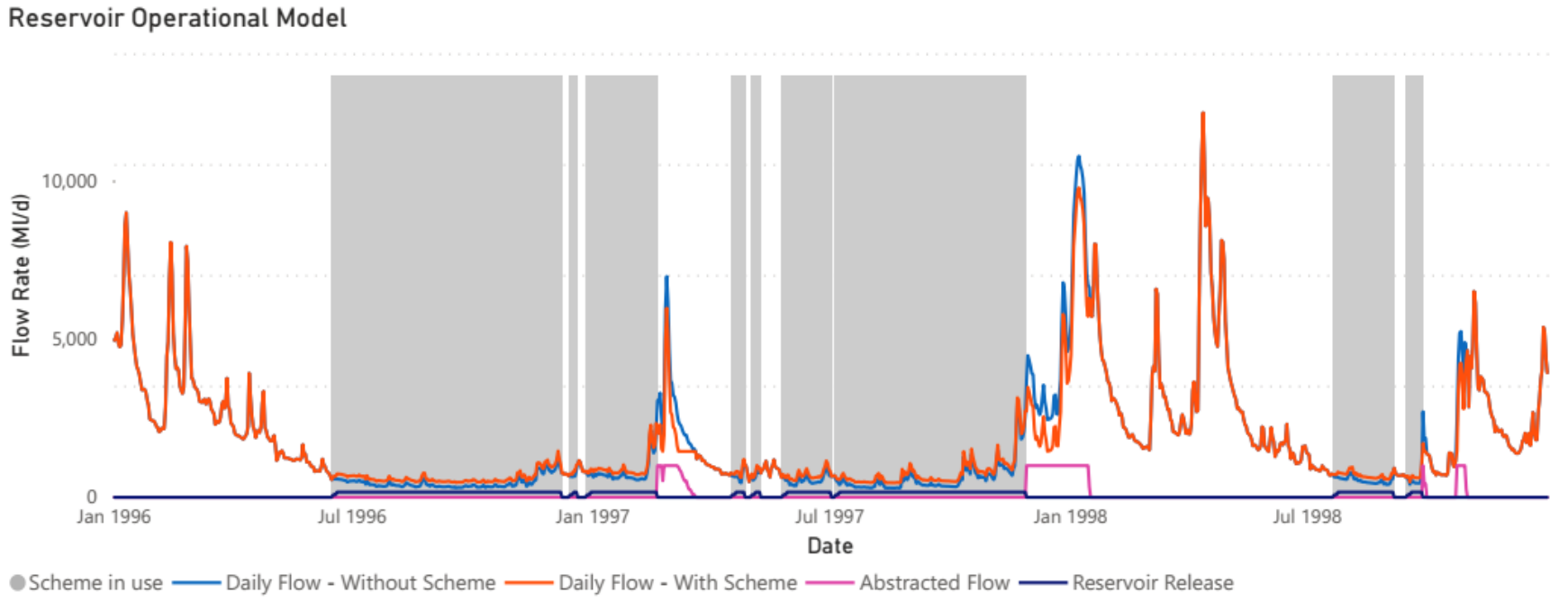


Option 1 - Reservoir storage and operations for all year's (1920-2010)

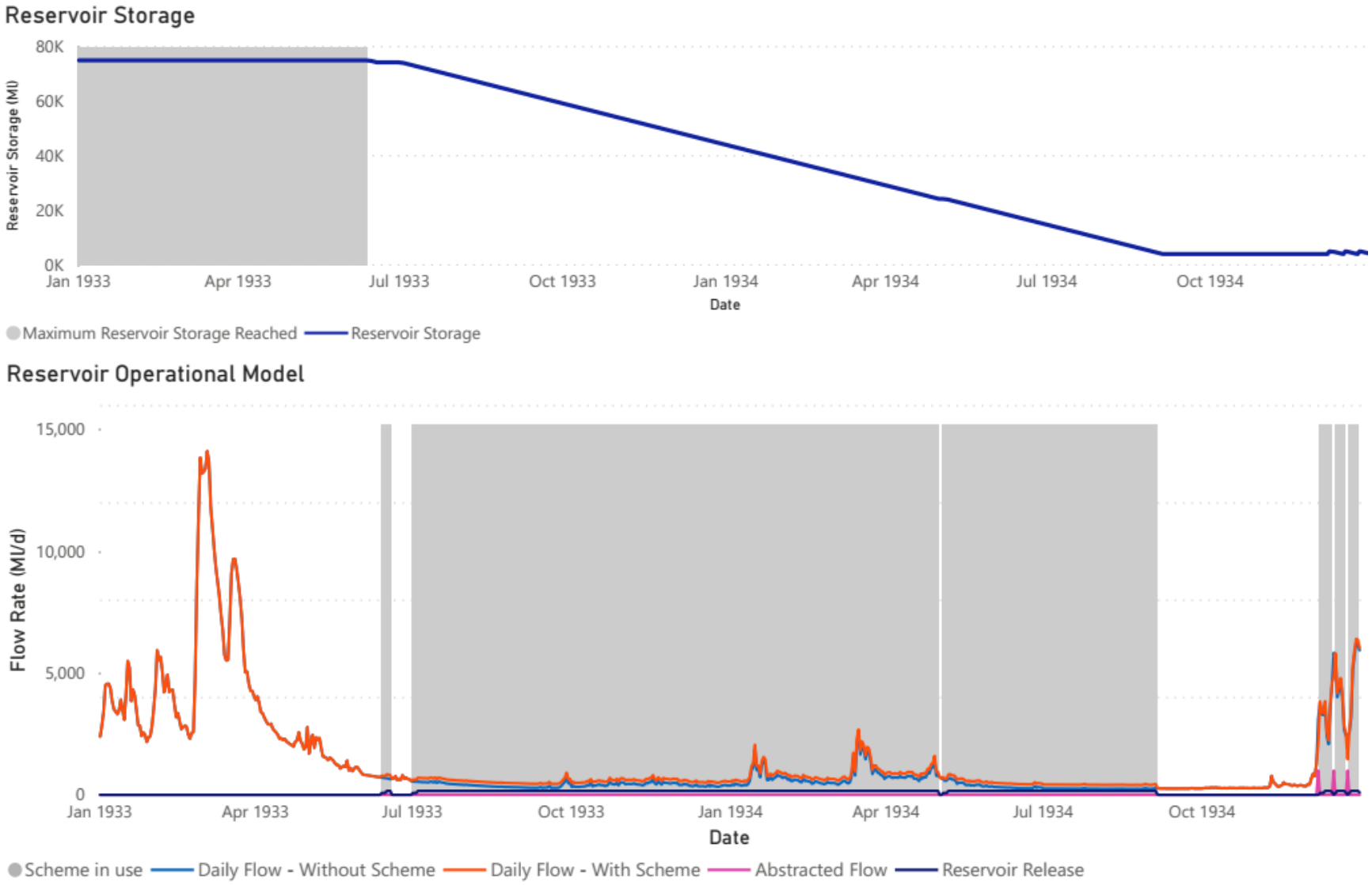


Option 1 - Reservoir storage and operations for typical non-drought (1986-88)

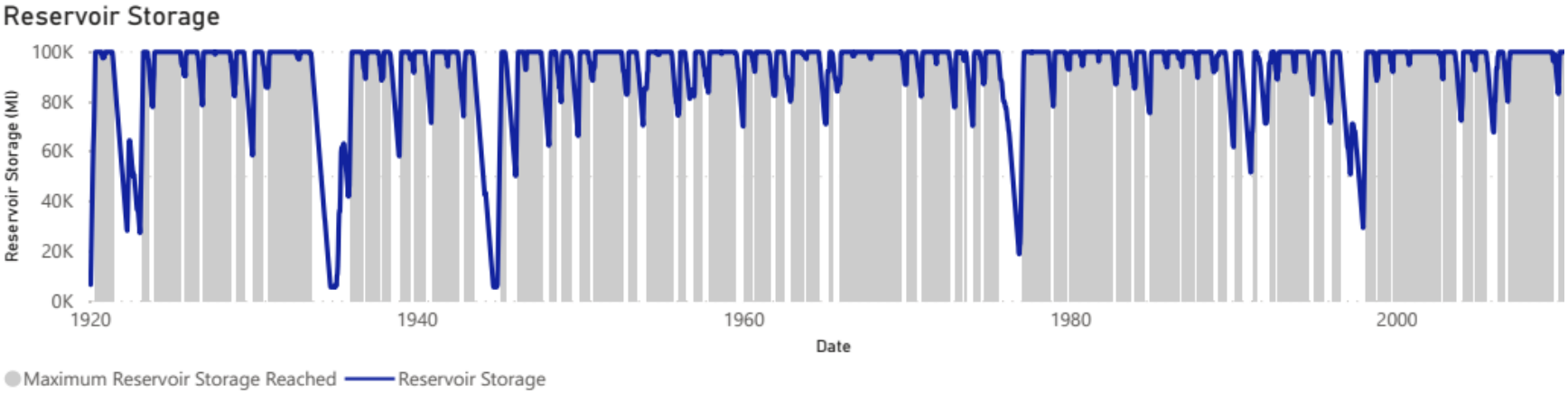


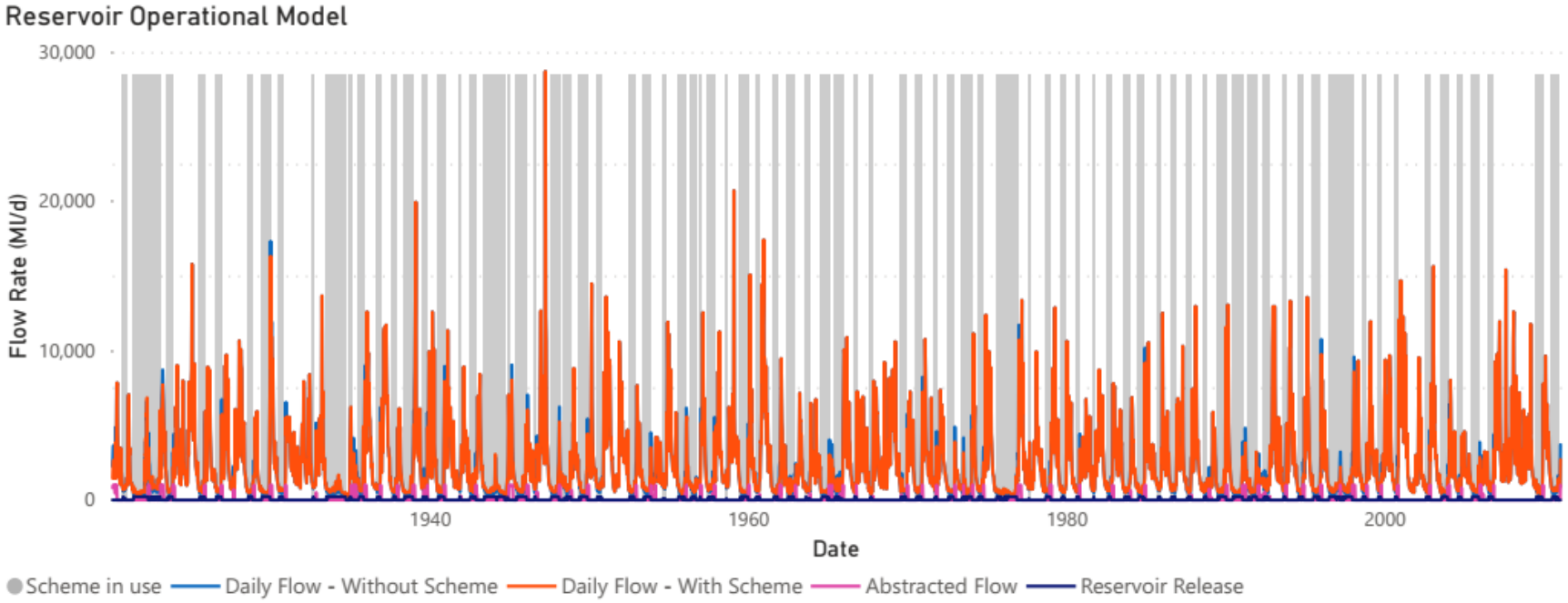


Option 1 - Reservoir storage and operations for typical drought (1996-98)

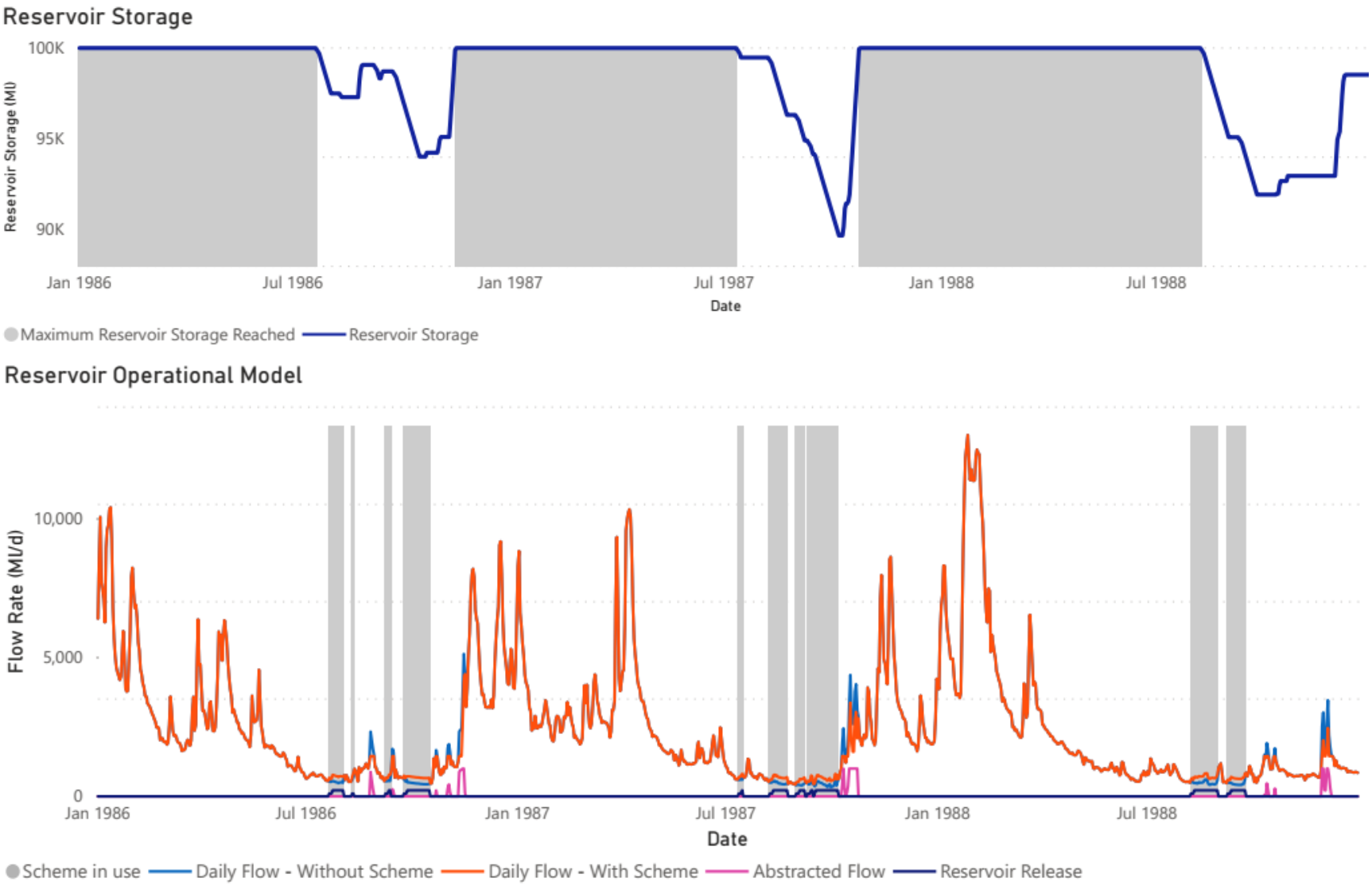


Option 1 - Reservoir storage and operations for extreme drought (1933-34)

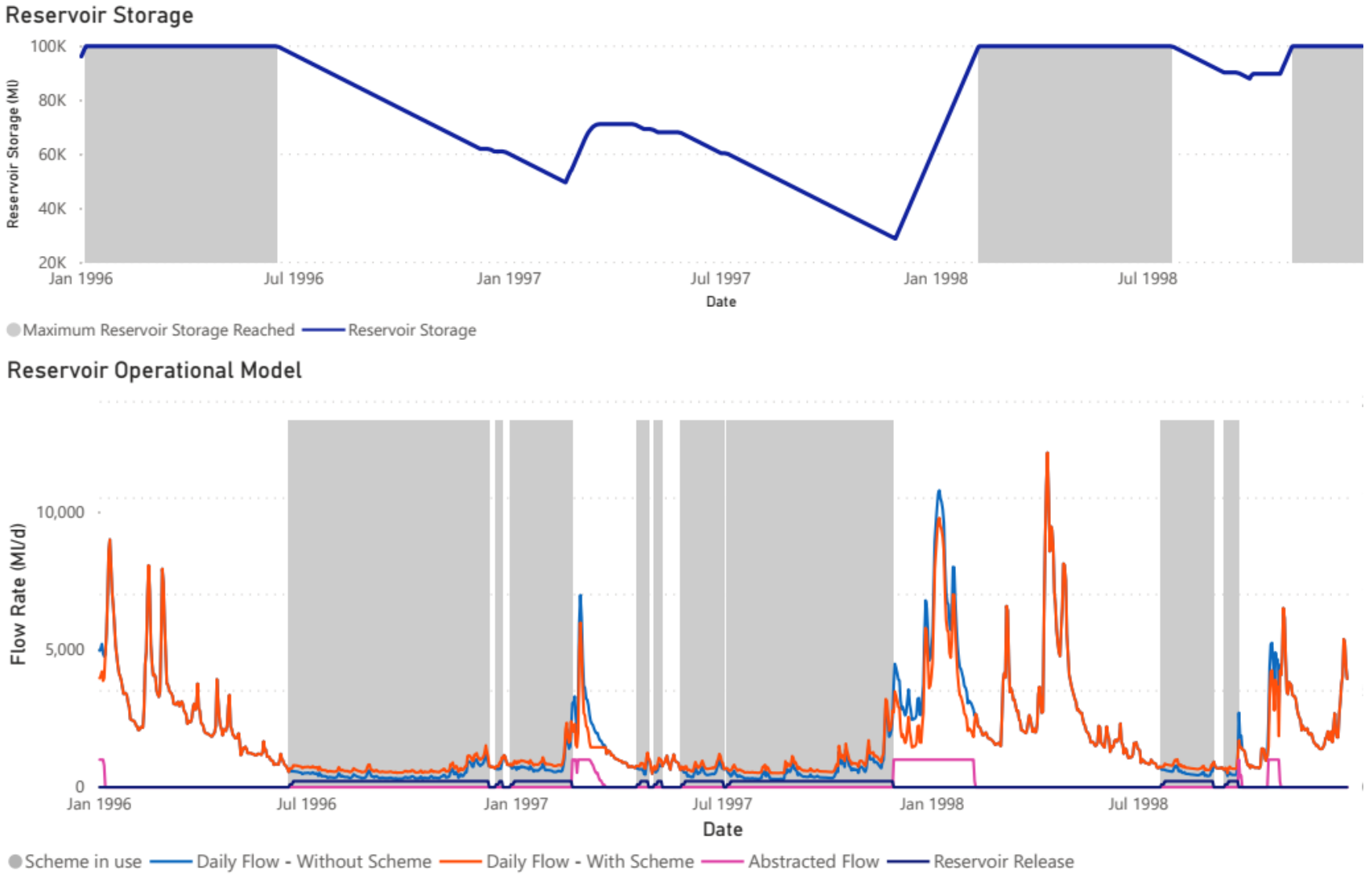




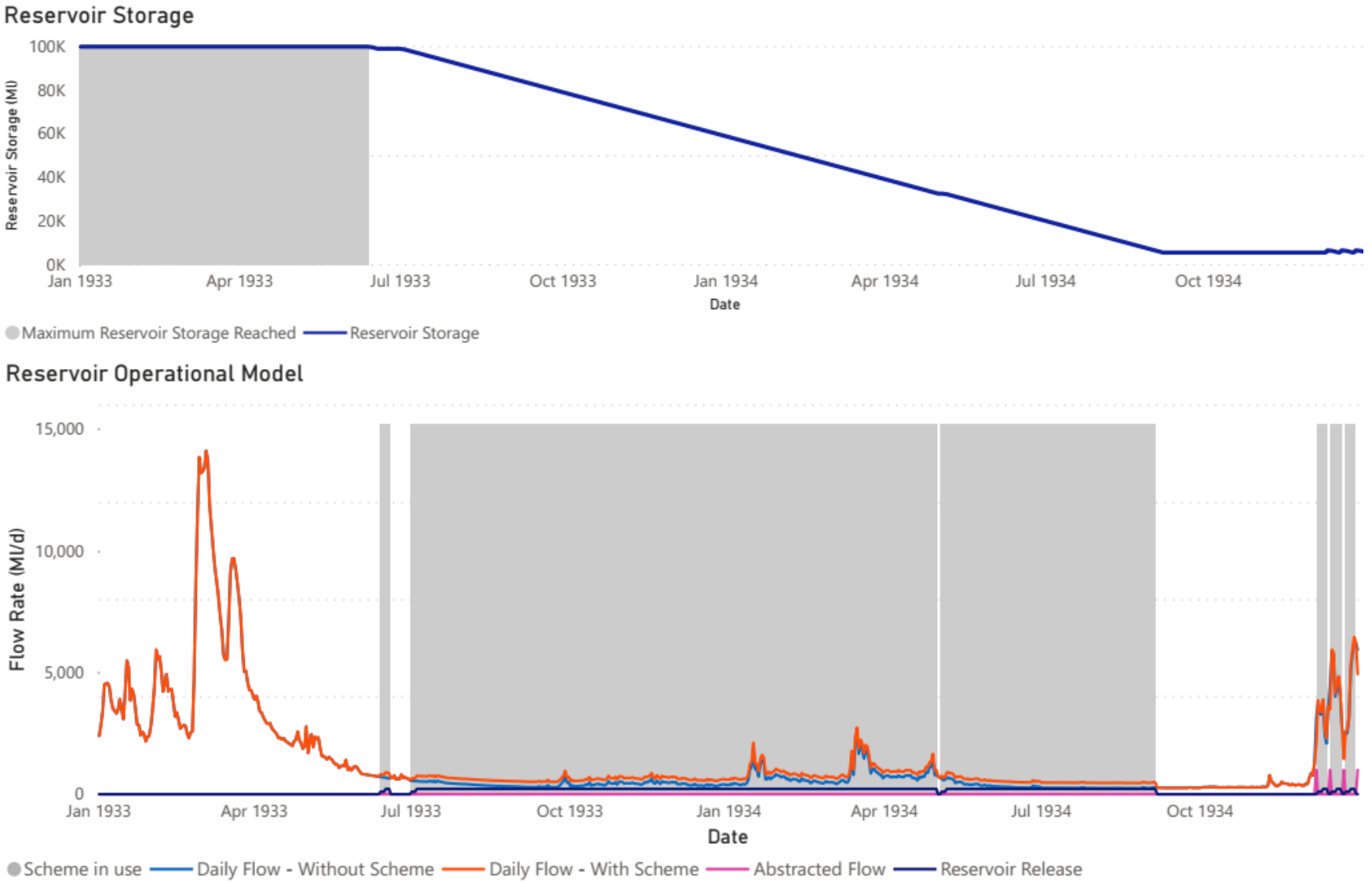
Option 2 - Reservoir storage and operations for all year's (1920-2010)



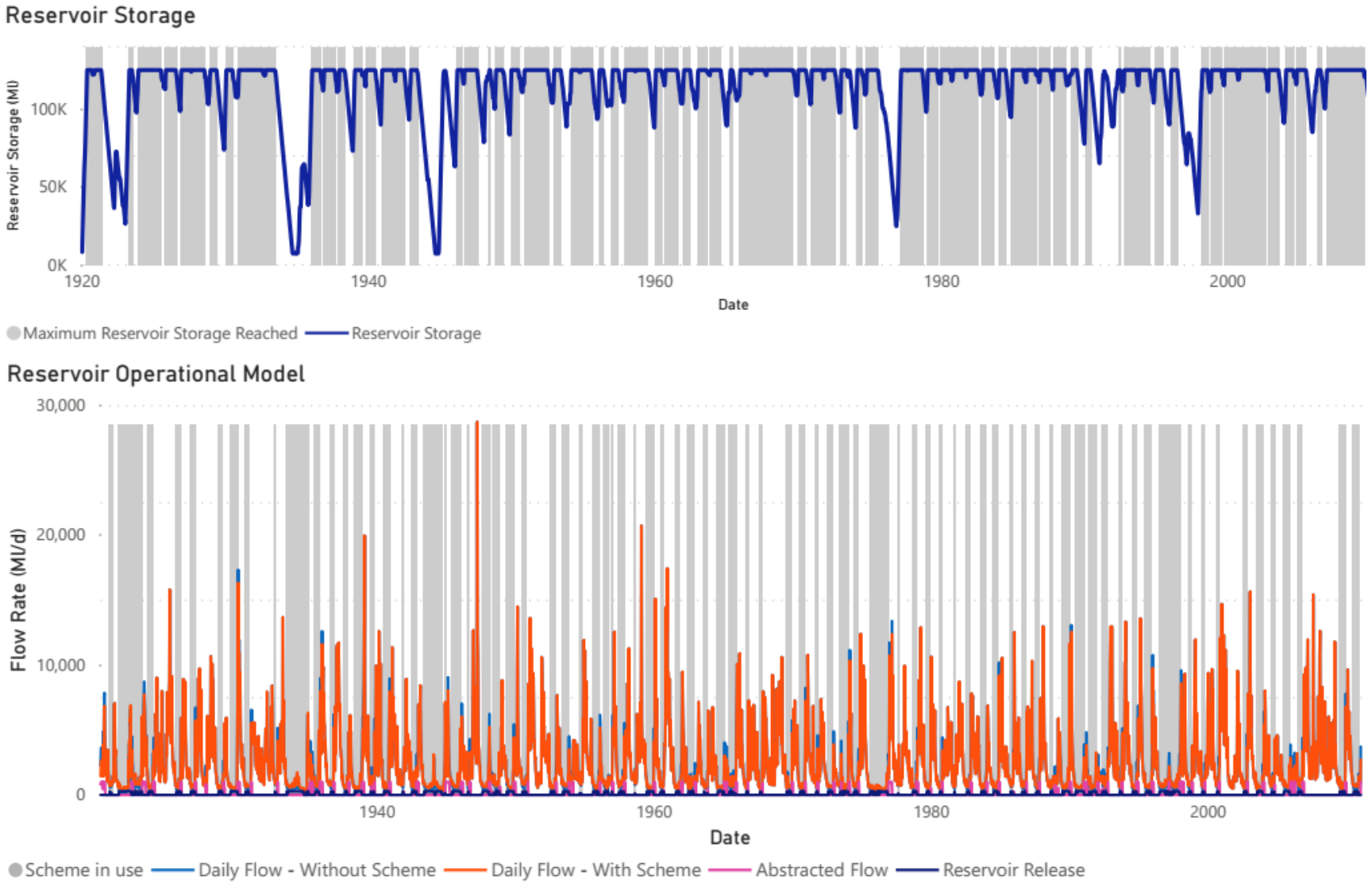
Option 2 - Reservoir storage and operations for typical non-drought (1986-88)



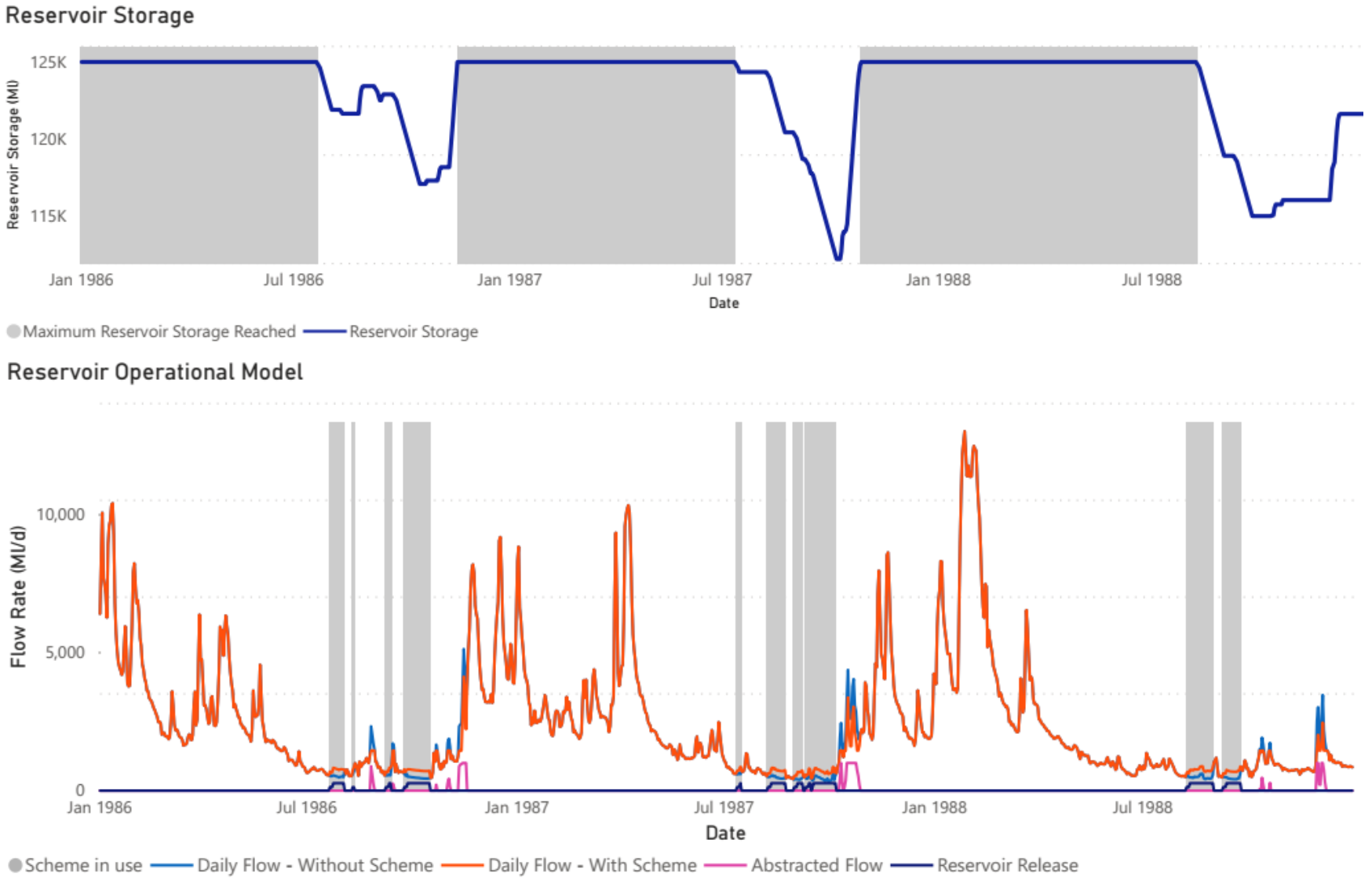
Option 2 - Reservoir storage and operations for typical drought (1996-98)



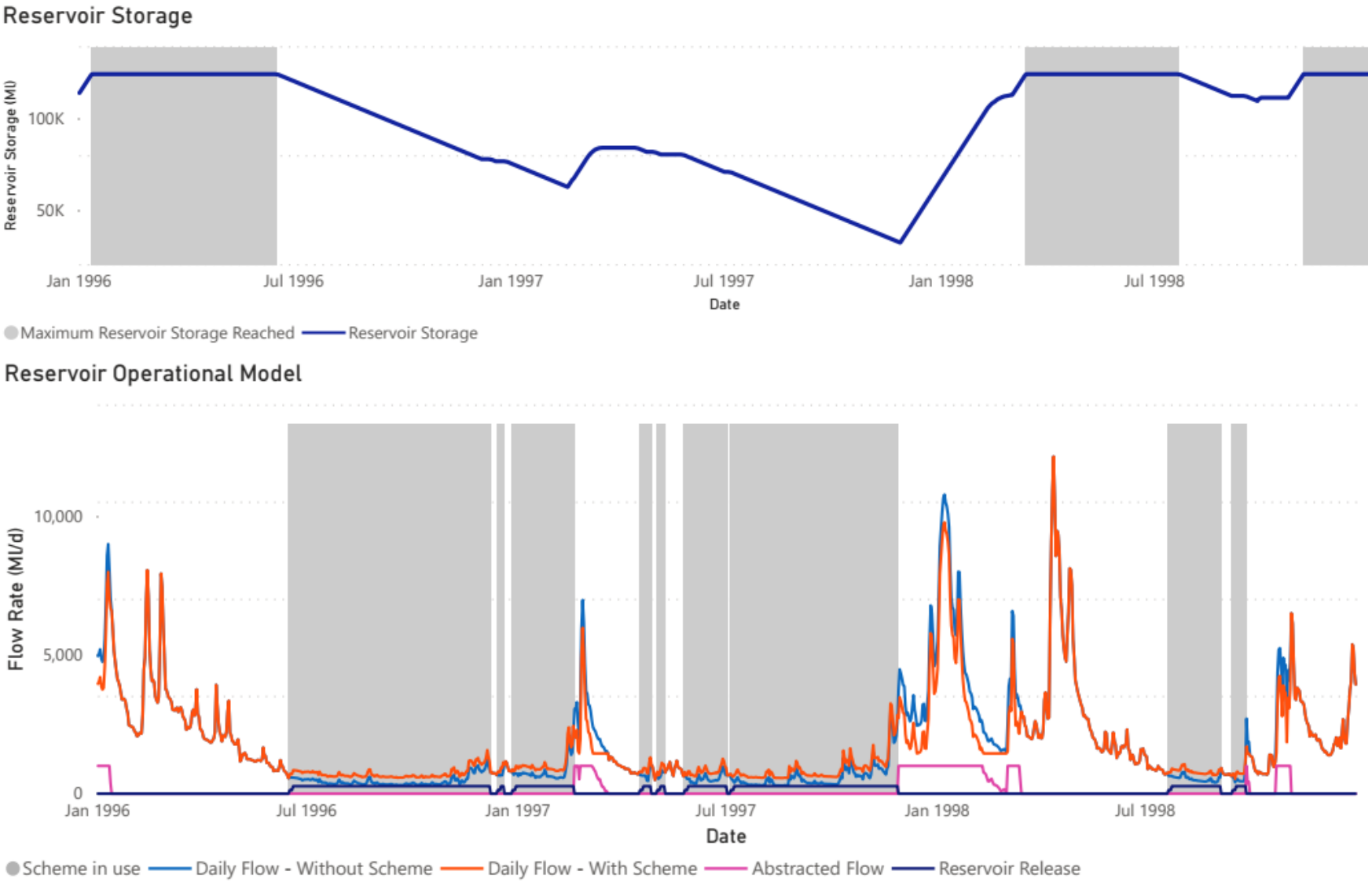
Option 2 - Reservoir storage and operations for extreme drought (1933-34)



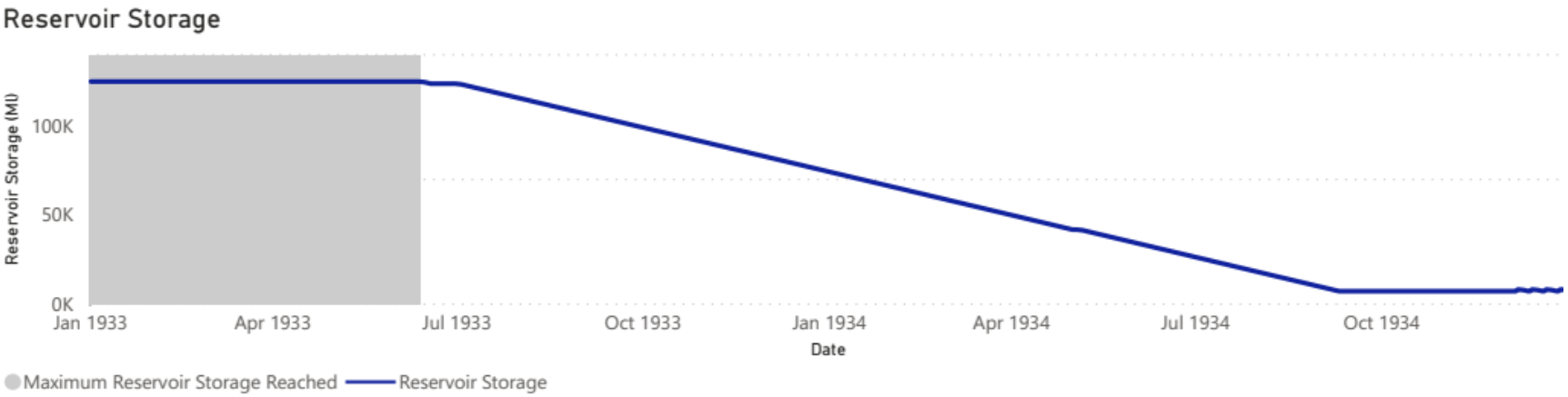
Option 3 - Reservoir storage and operations for all year's (1920-2010)

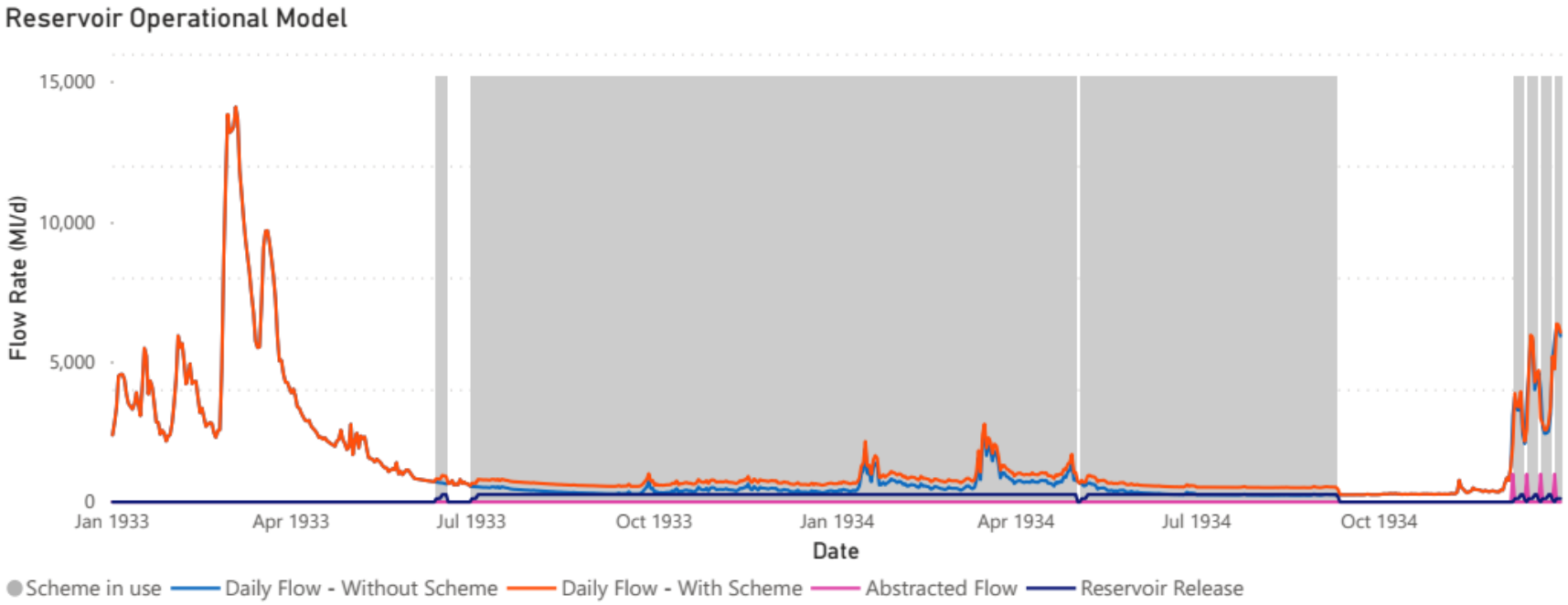


Option 3 - Reservoir storage and operations for typical non-drought (1986-88)

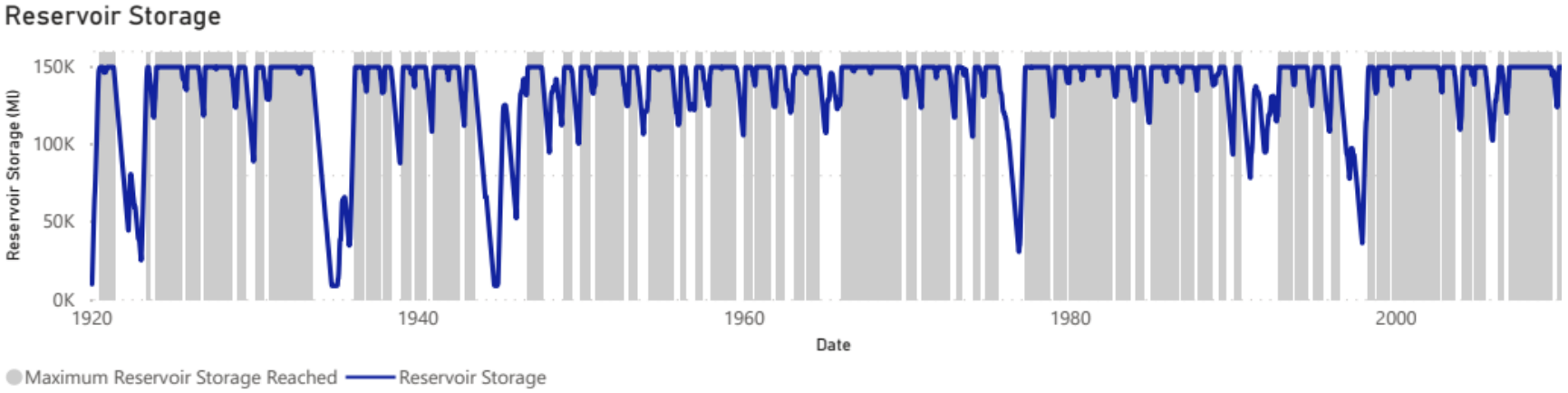


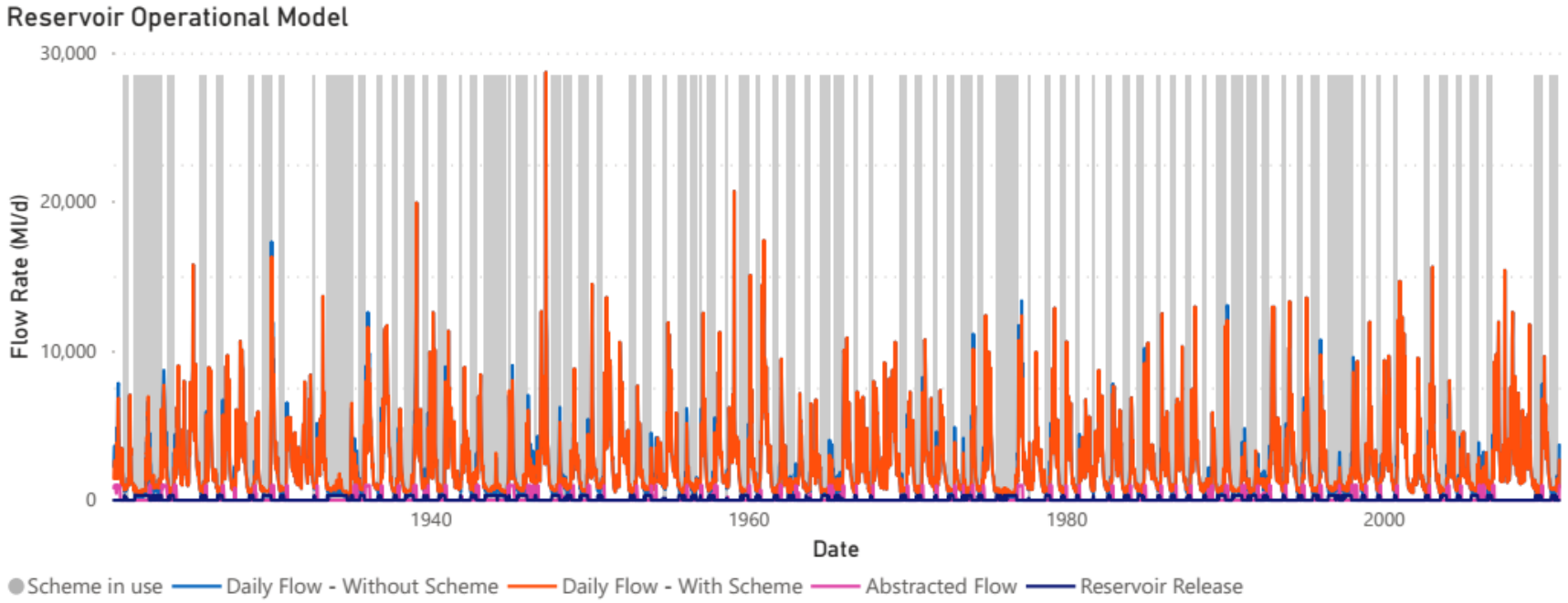
Option 3 - Reservoir storage and operations for typical drought (1996-98)



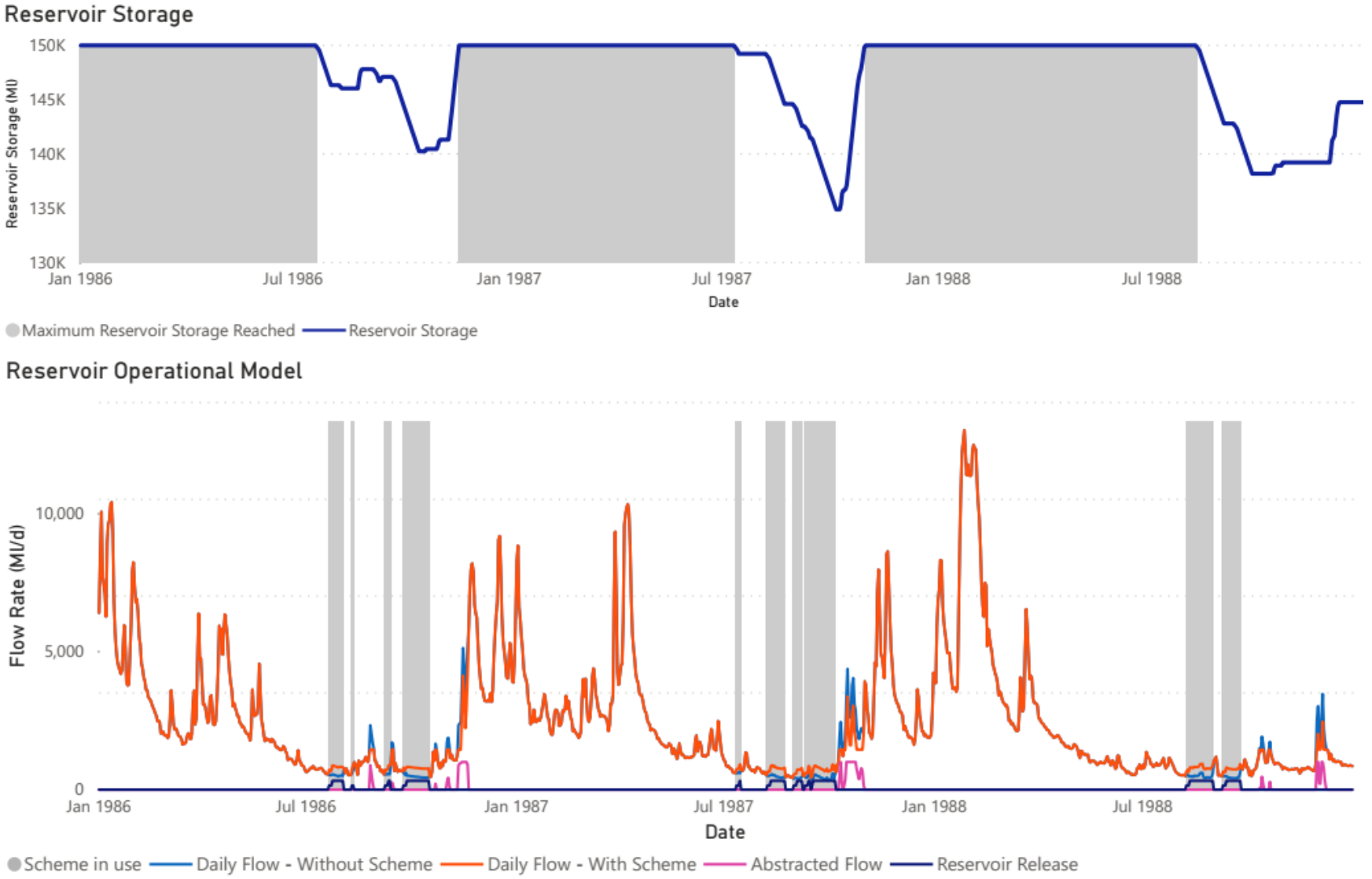


Option 3 - Reservoir storage and operations for extreme drought (1933-34)

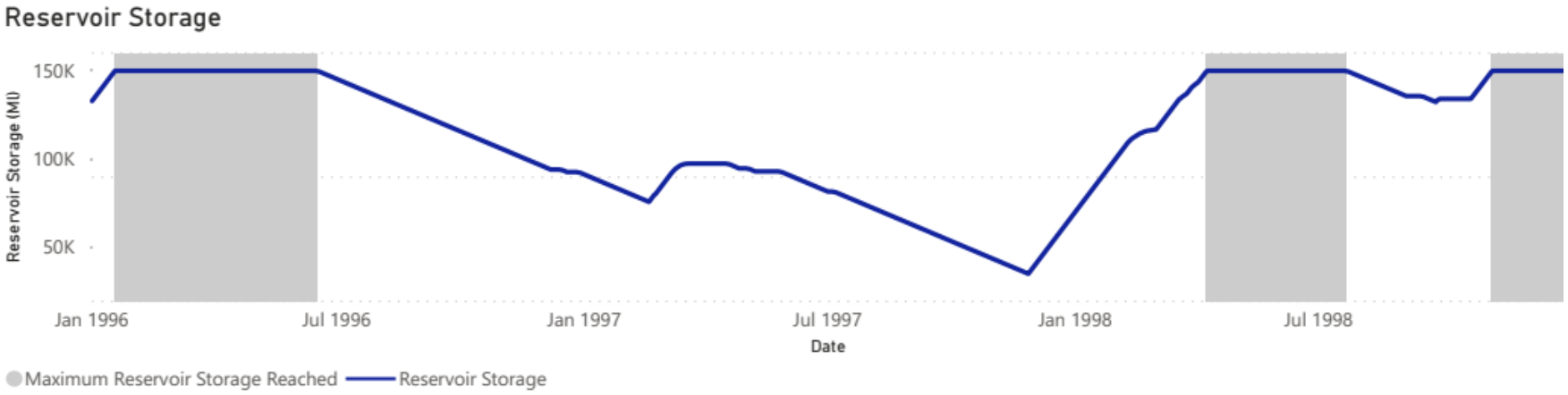


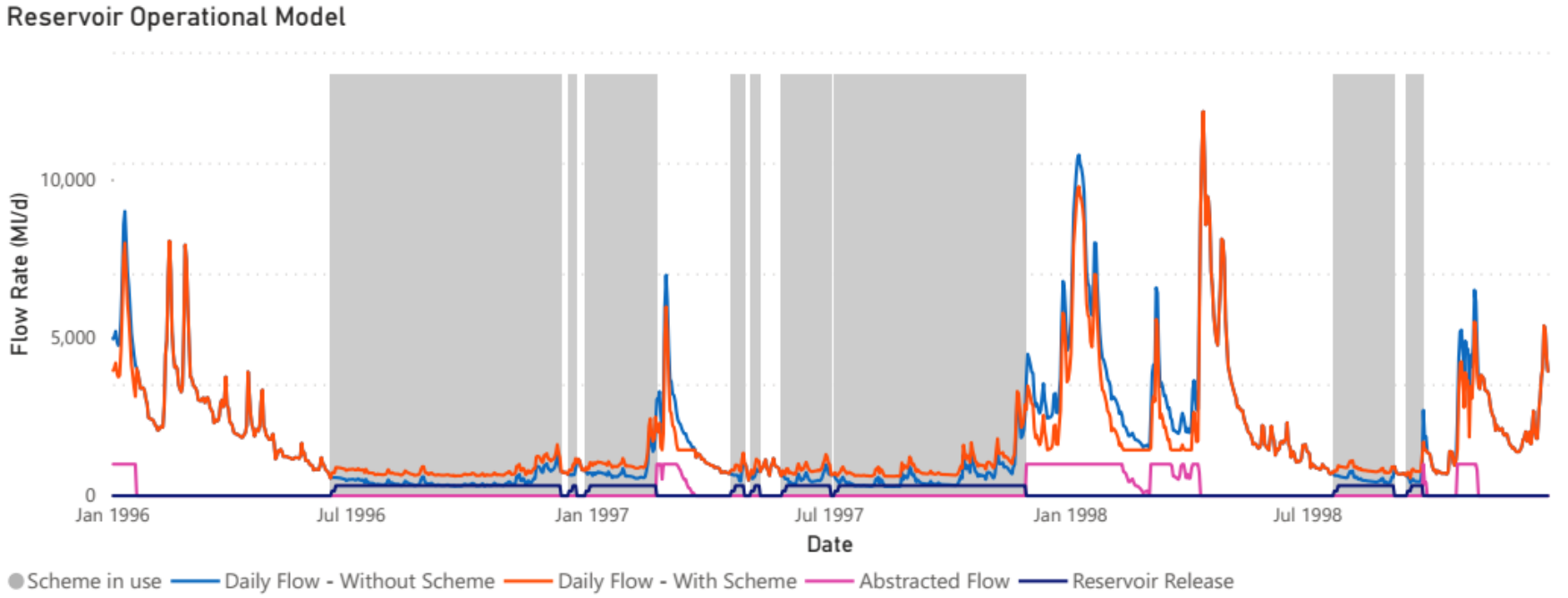


Option 4a - Reservoir storage and operations for all year's (1920-2010)

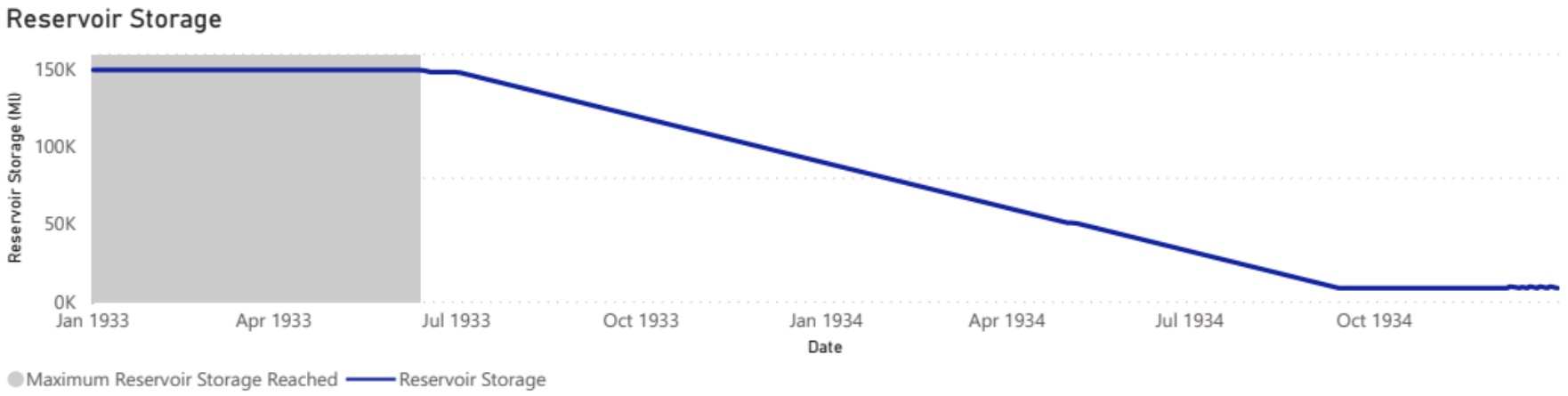


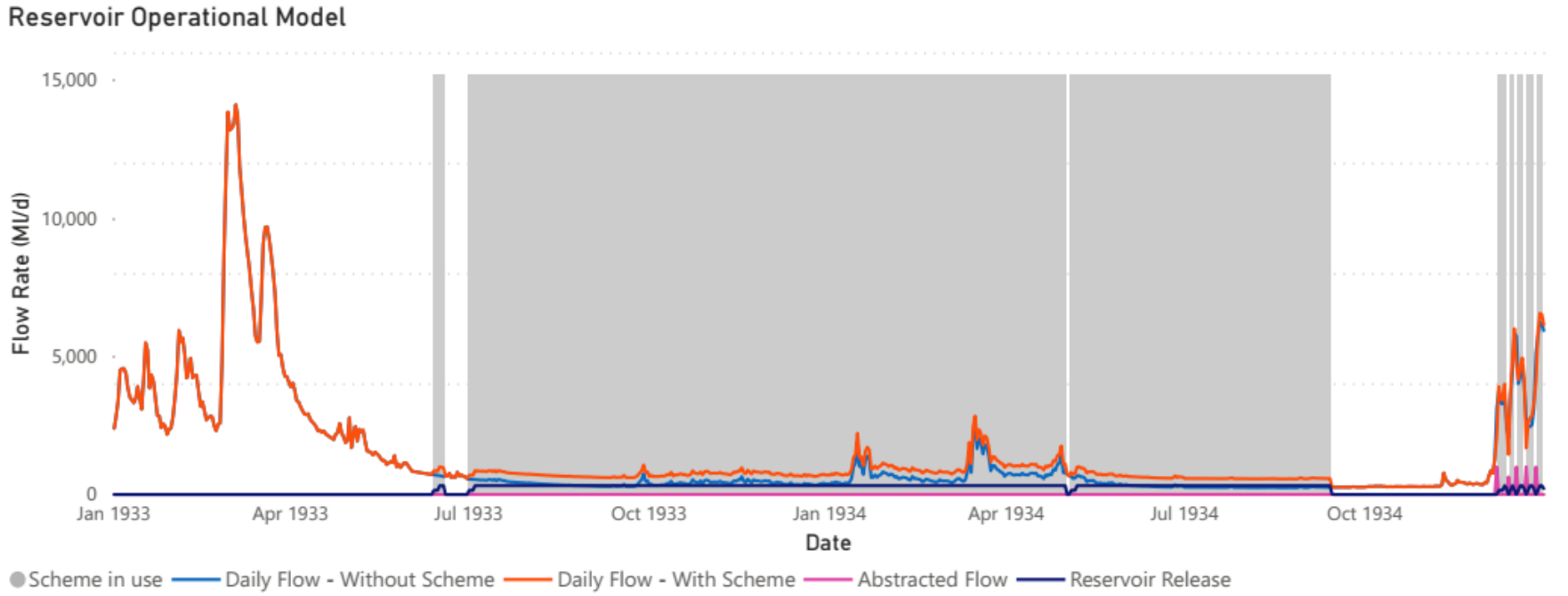
Option 4a - Reservoir storage and operations for typical non-drought (1986-88)



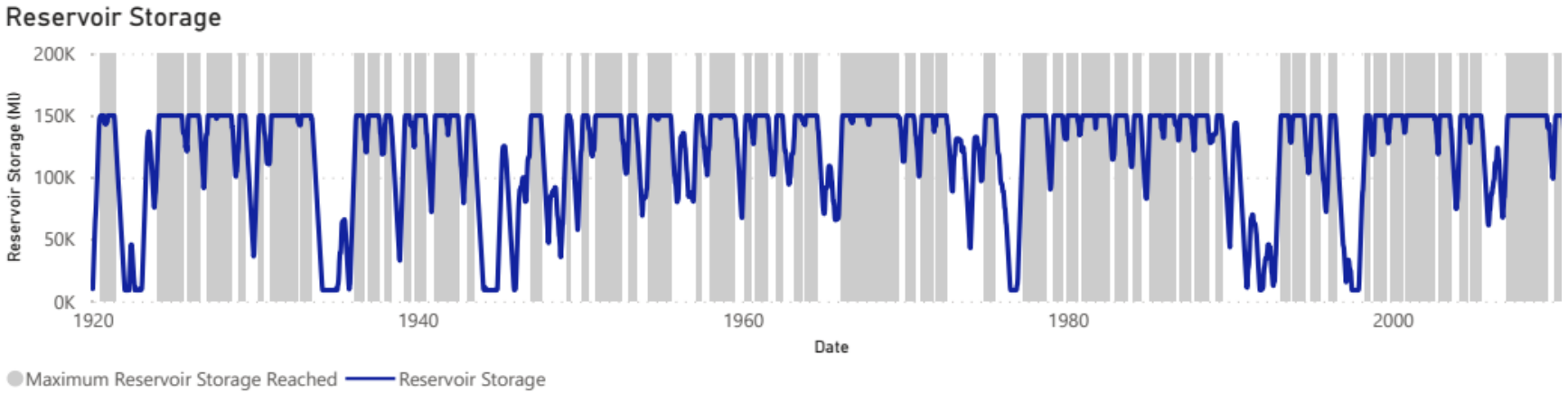


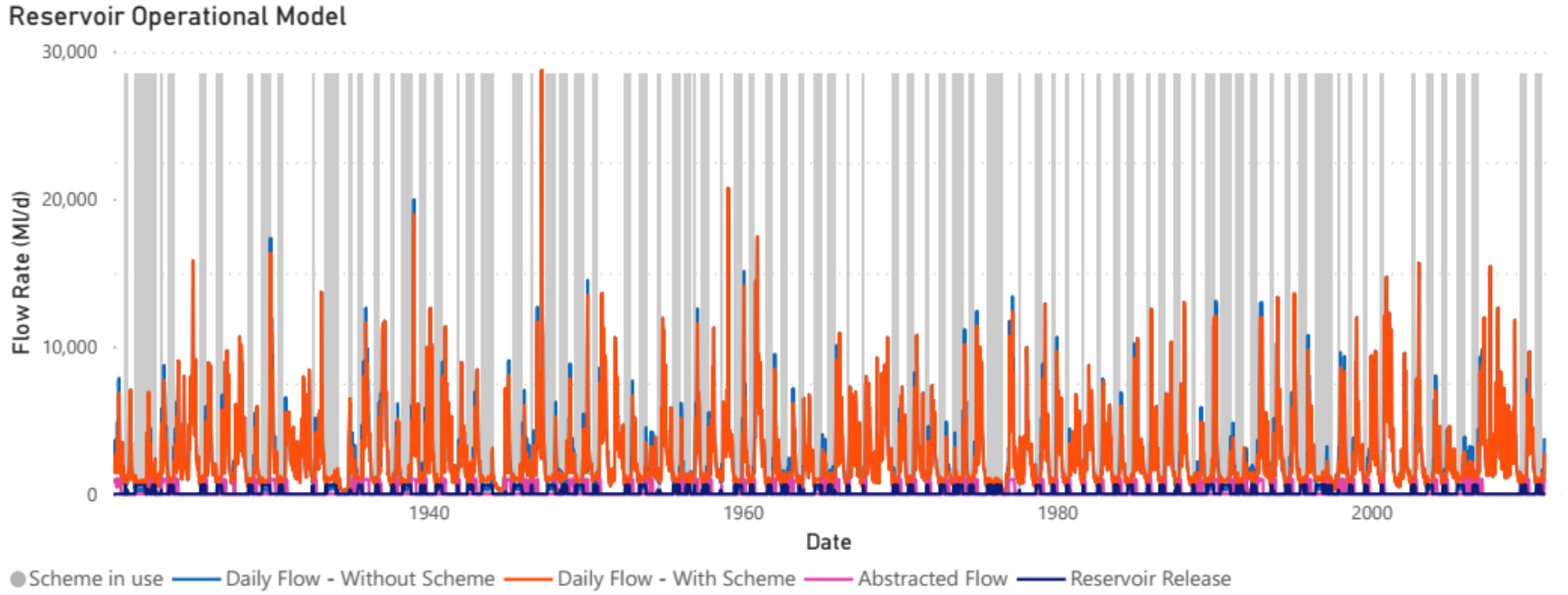
Option 4a - Reservoir storage and operations for typical drought (1996-98)



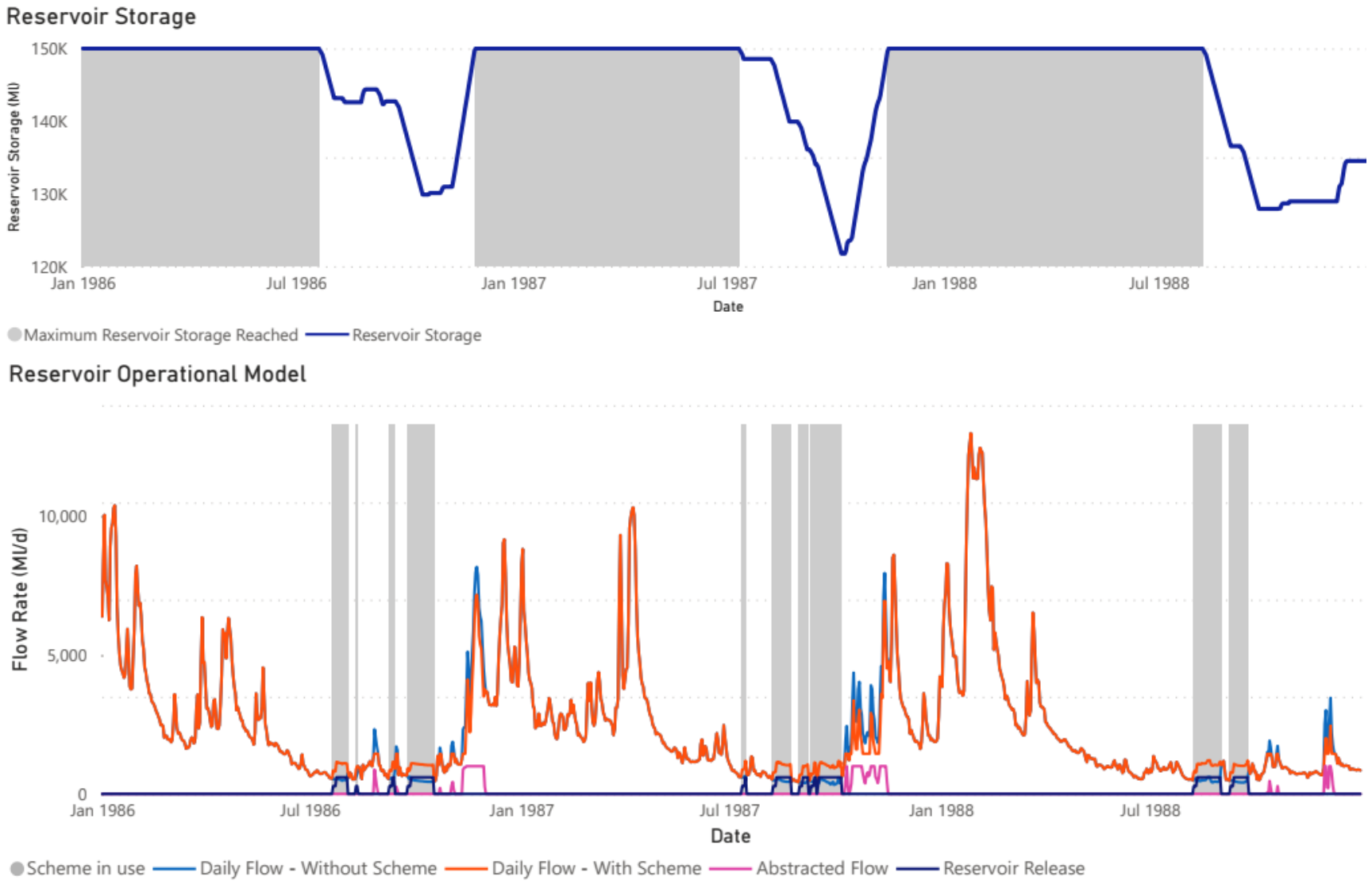


Option 4a - Reservoir storage and operations for extreme drought (1933-34)

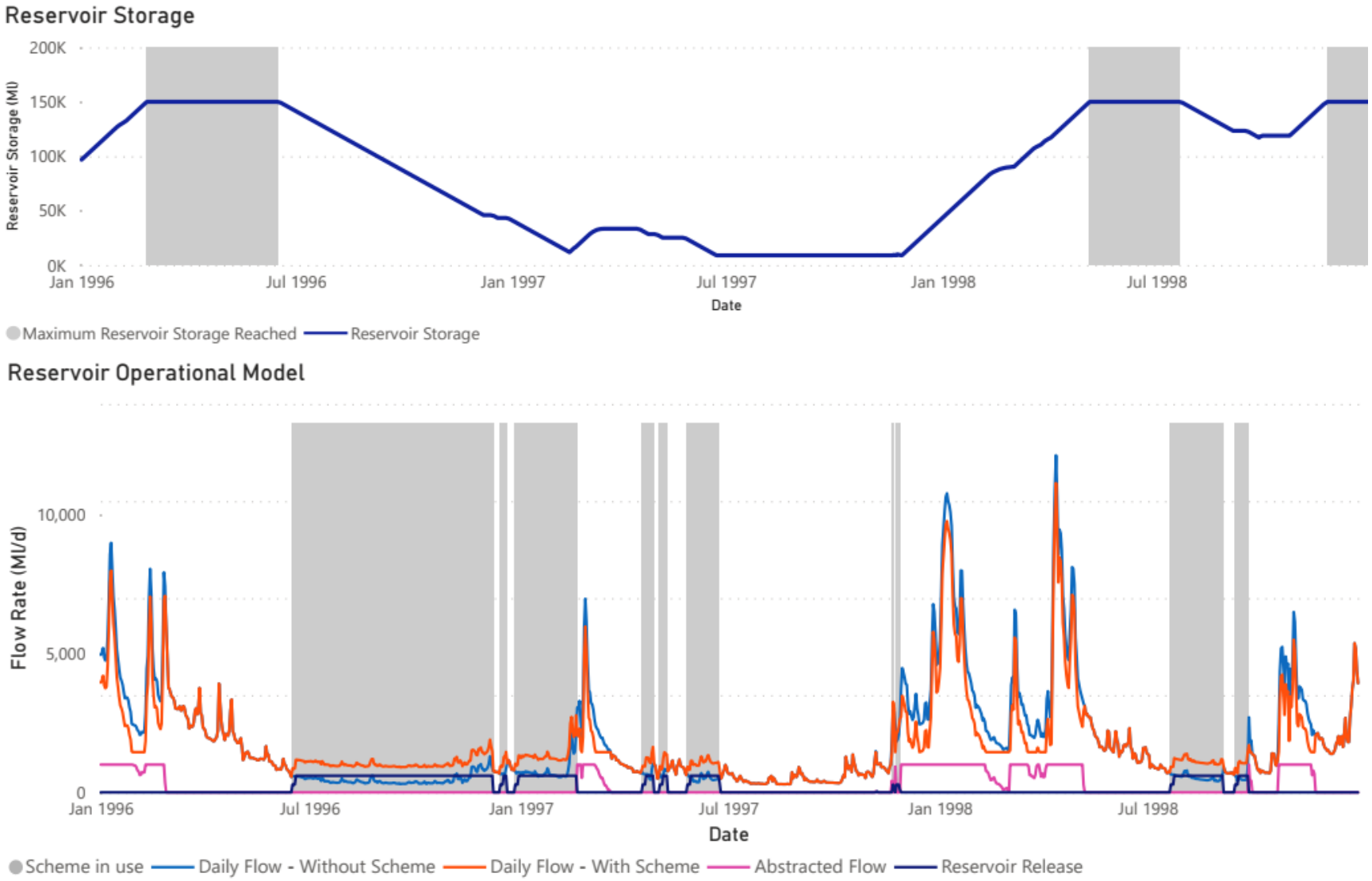




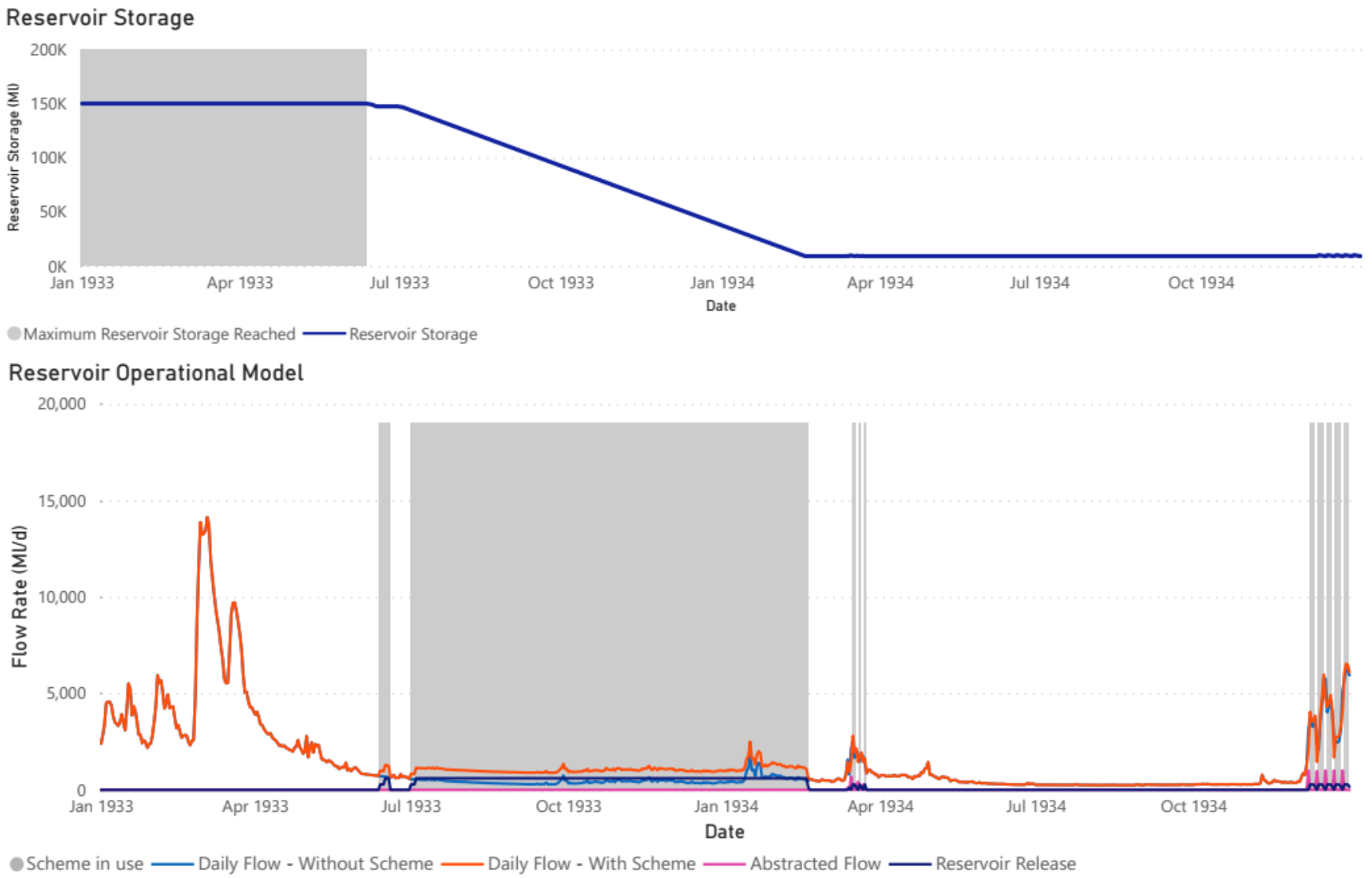
Option 4b - Reservoir storage and operations for all year's (1920-2010)



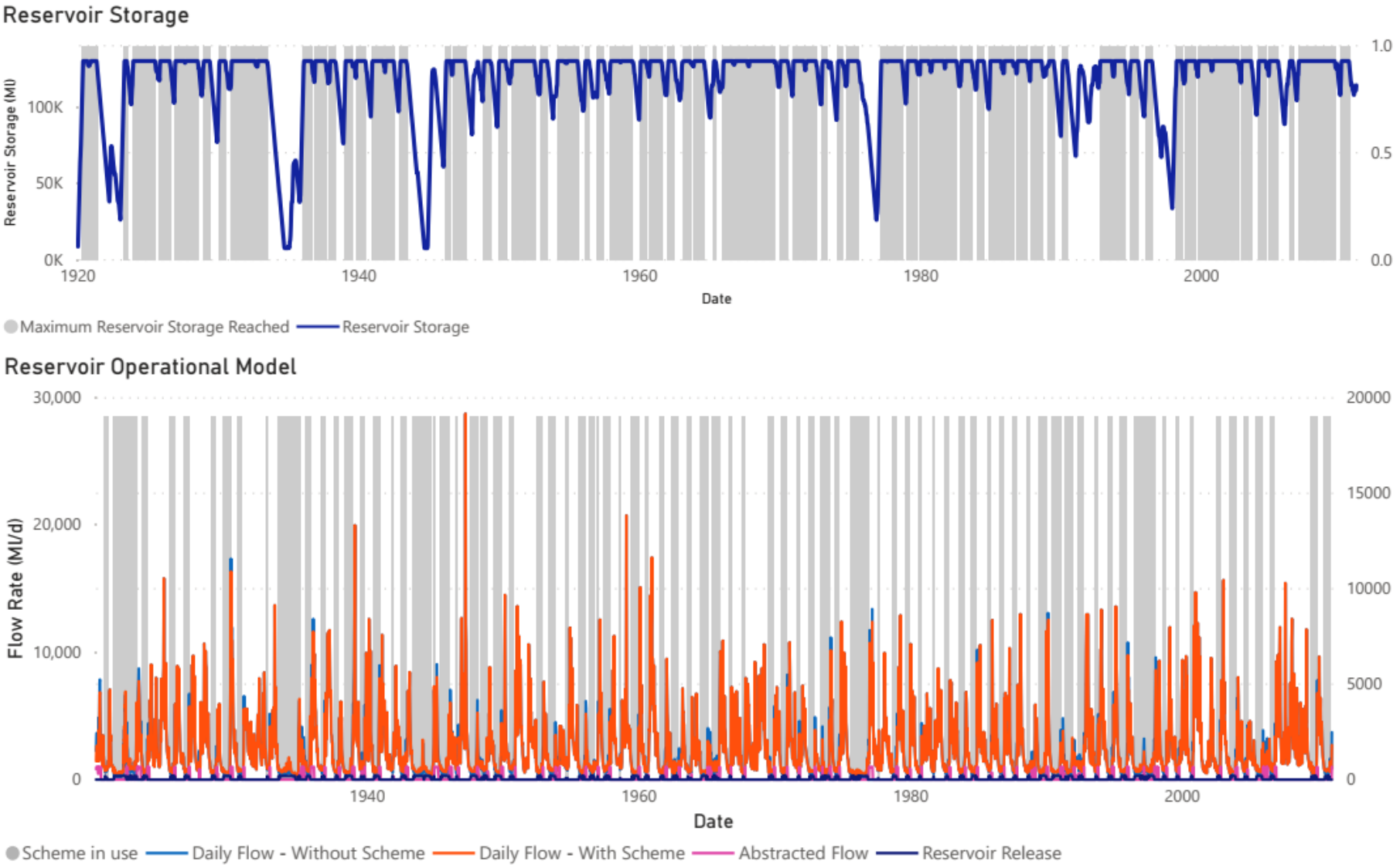
Option 4b - Reservoir storage and operations for typical non-drought (1986-88)



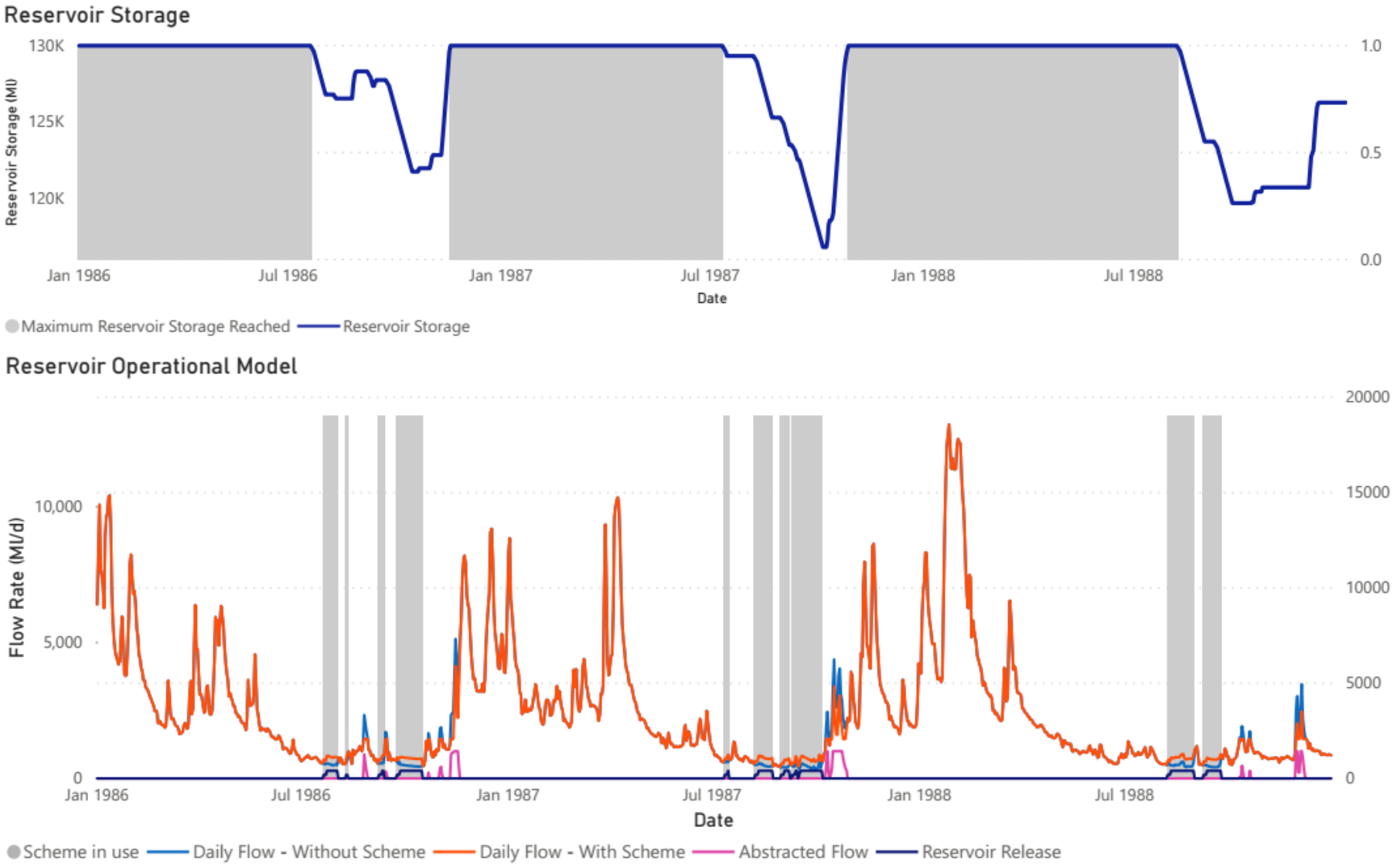
Option 4b - Reservoir storage and operations for typical drought (1996-98)



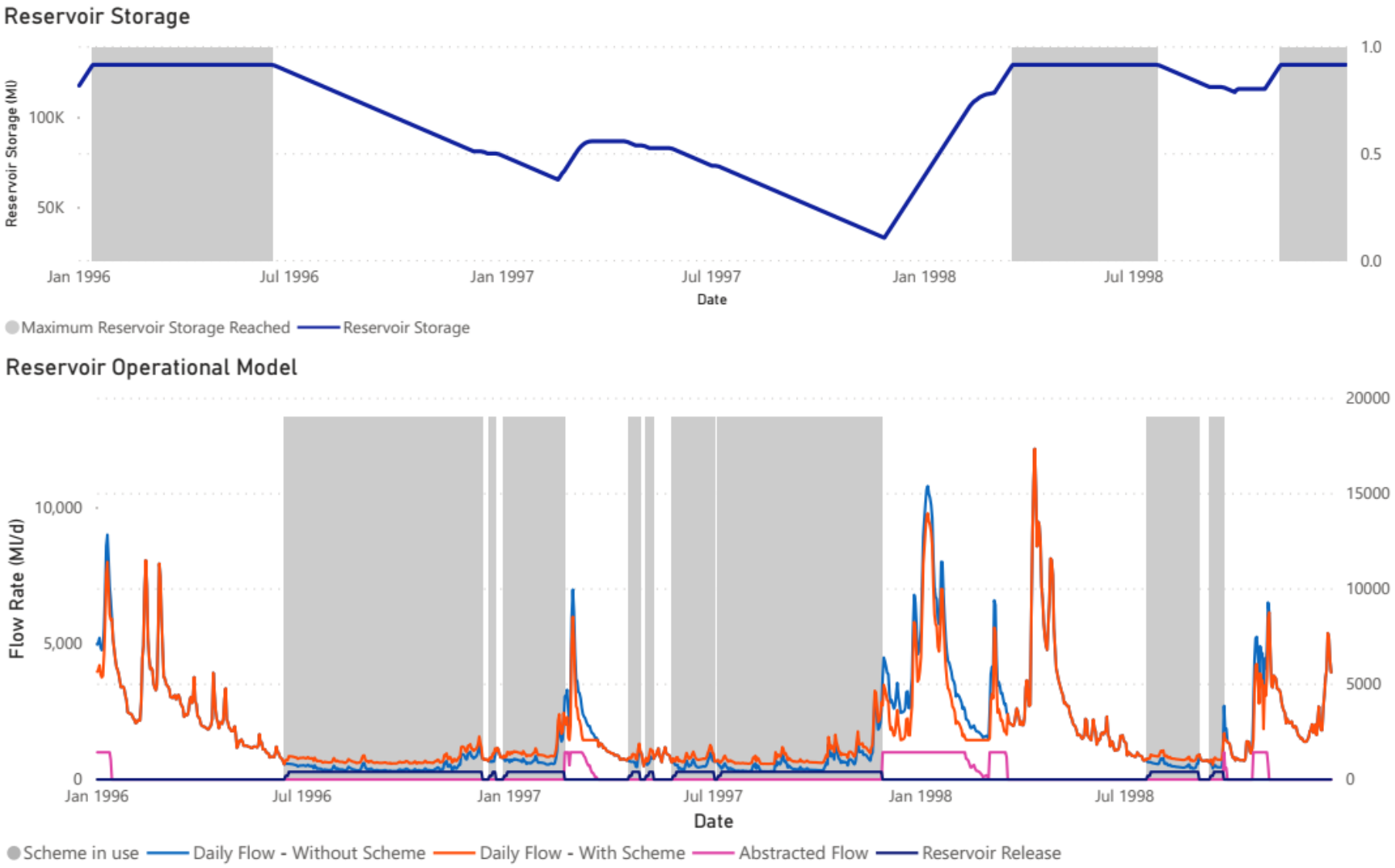
Option 4b - Reservoir storage and operations for extreme drought (1933-34)



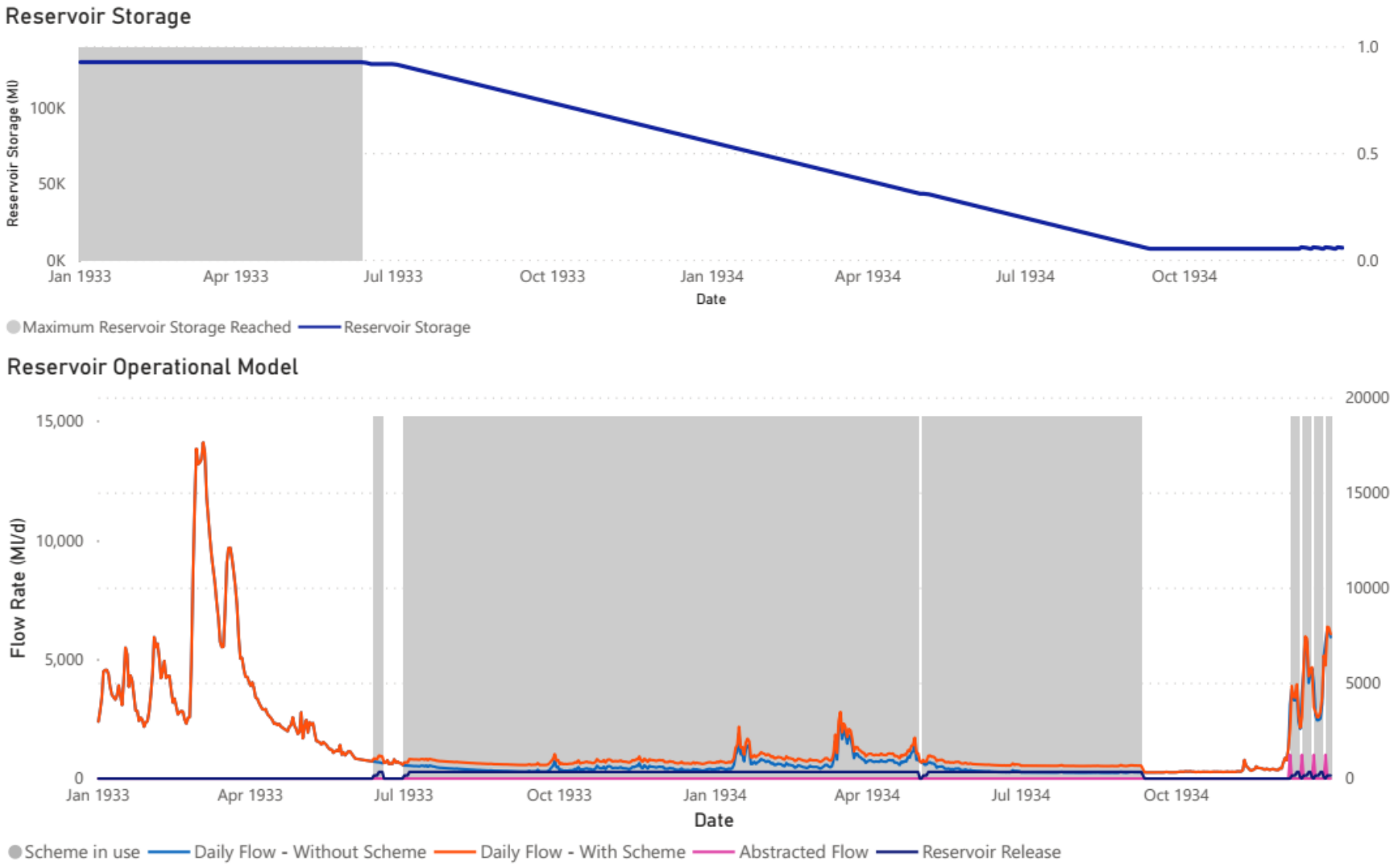
Option 5 - Reservoir storage and operations for all year's (1920-2010)



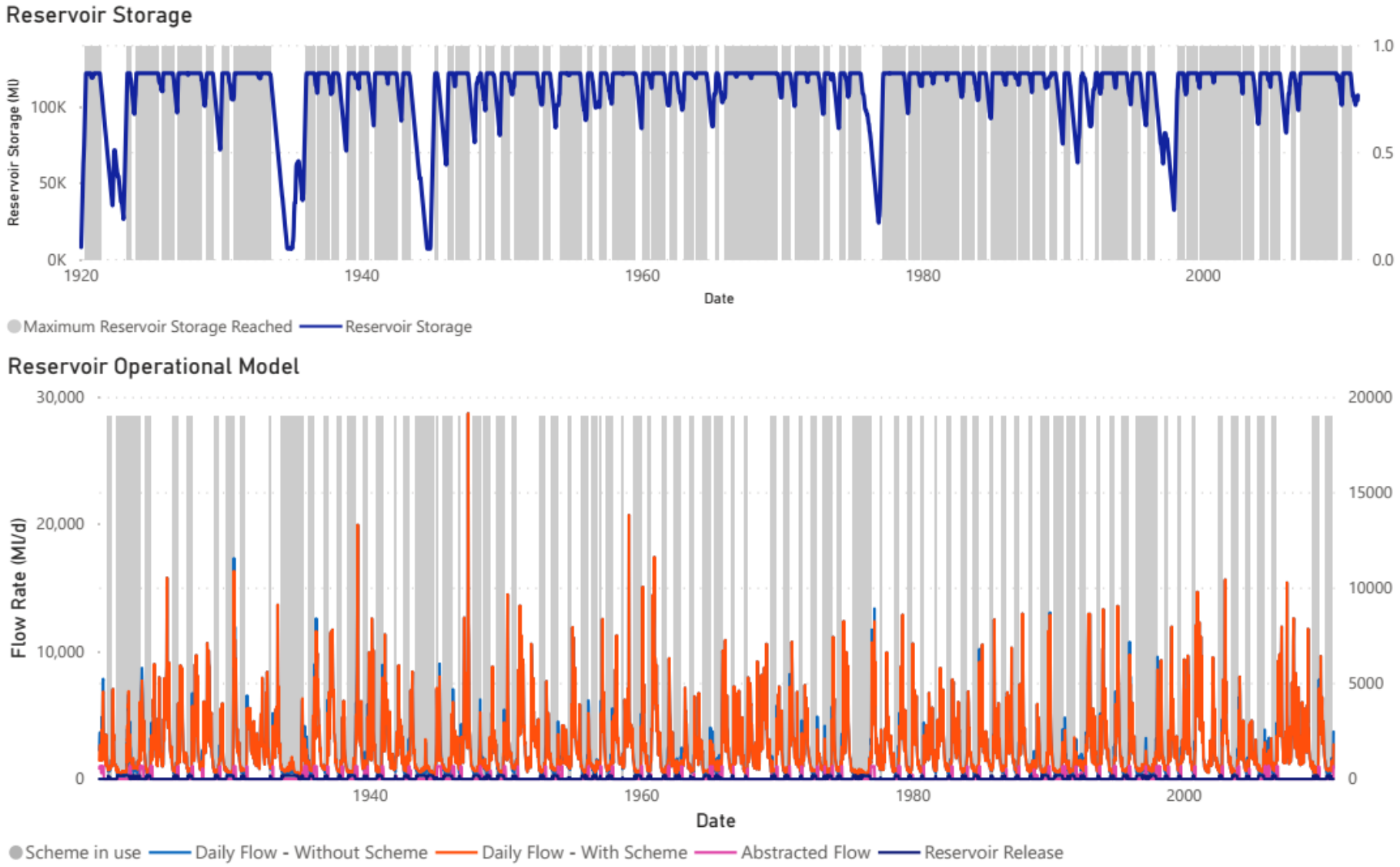
Option 5 - Reservoir storage and operations for typical non-drought (1986-88)



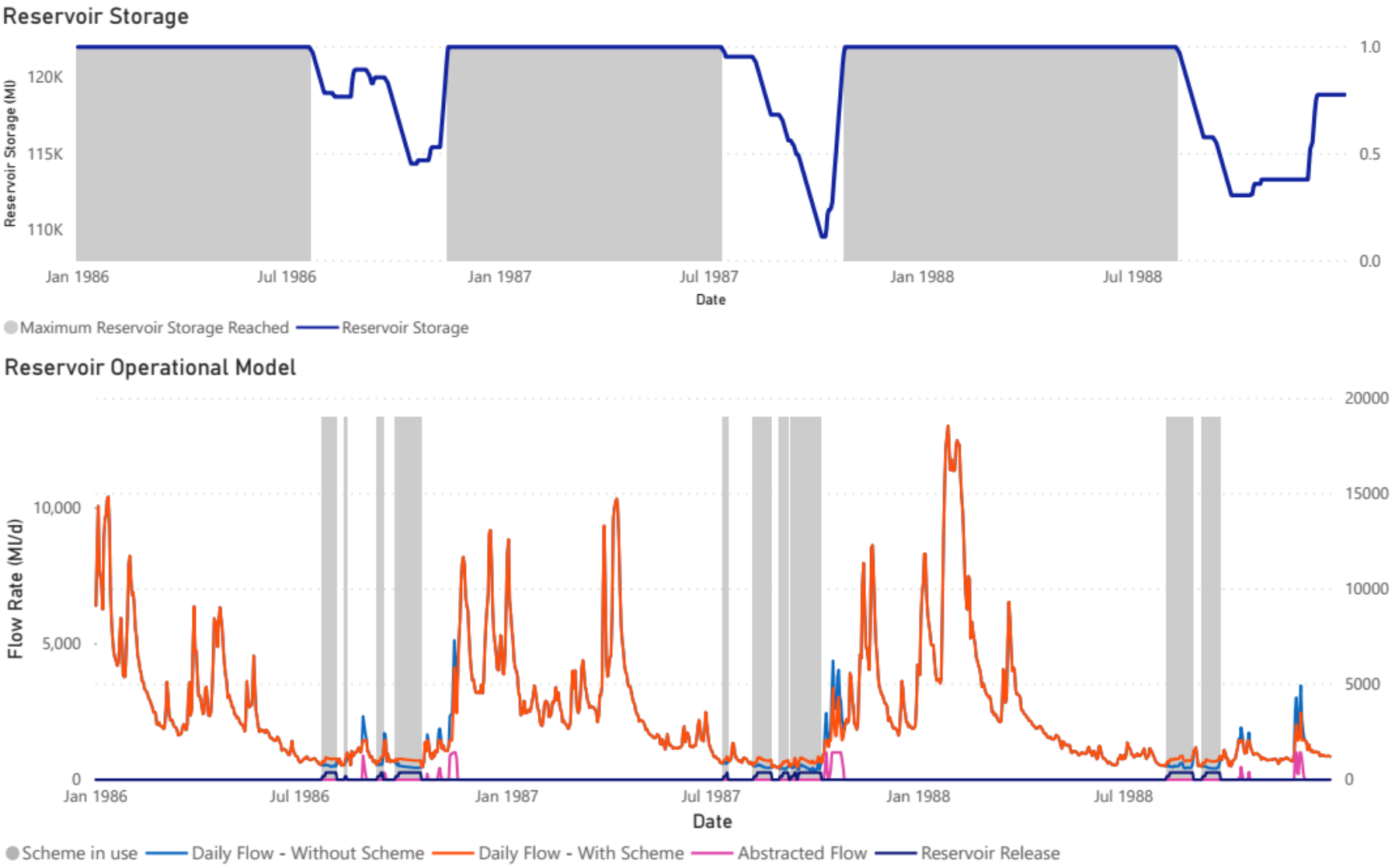
Option 5 - Reservoir storage and operations for typical drought (1996-98)



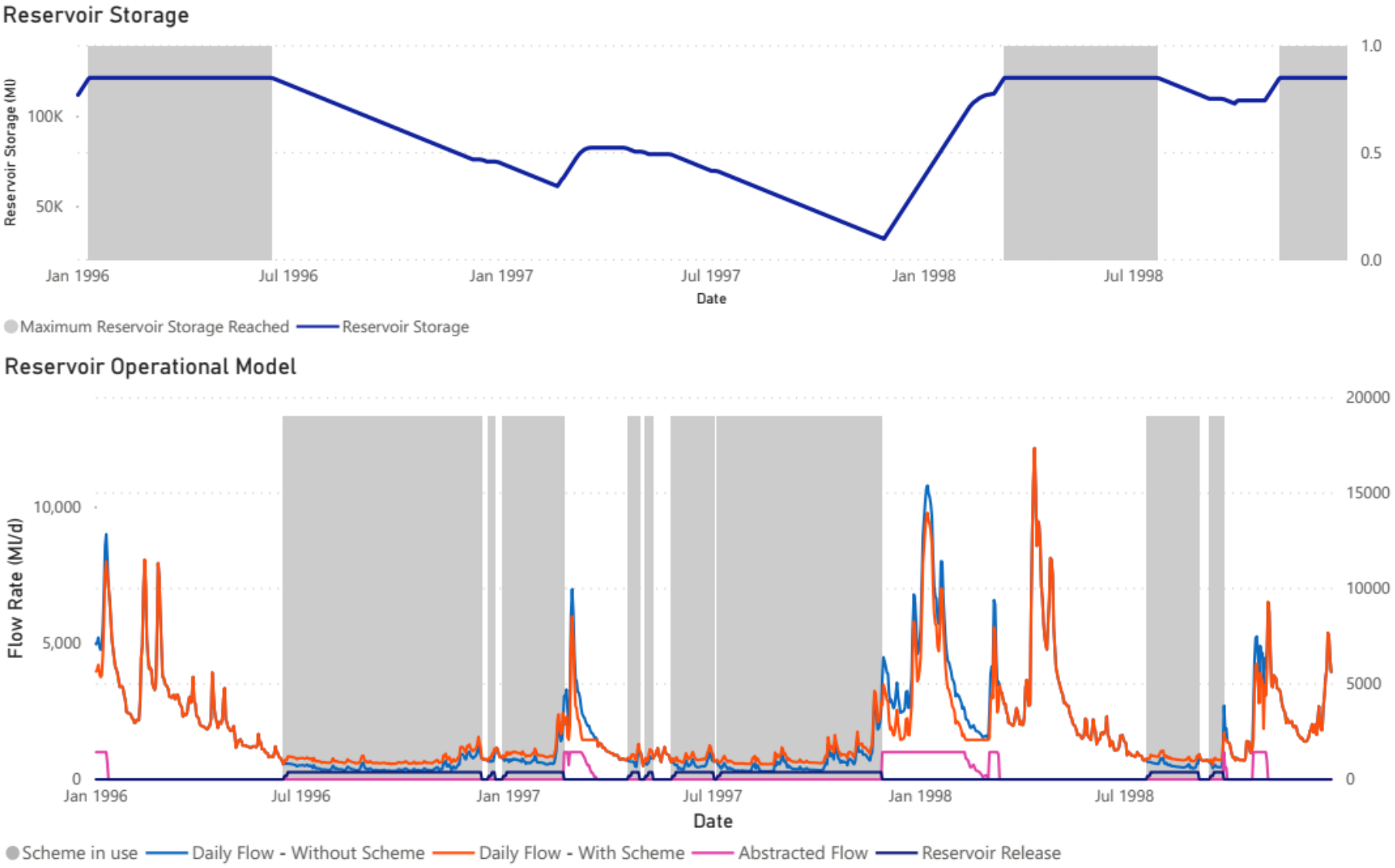
Option 5 - Reservoir storage and operations for extreme drought (1933-34)



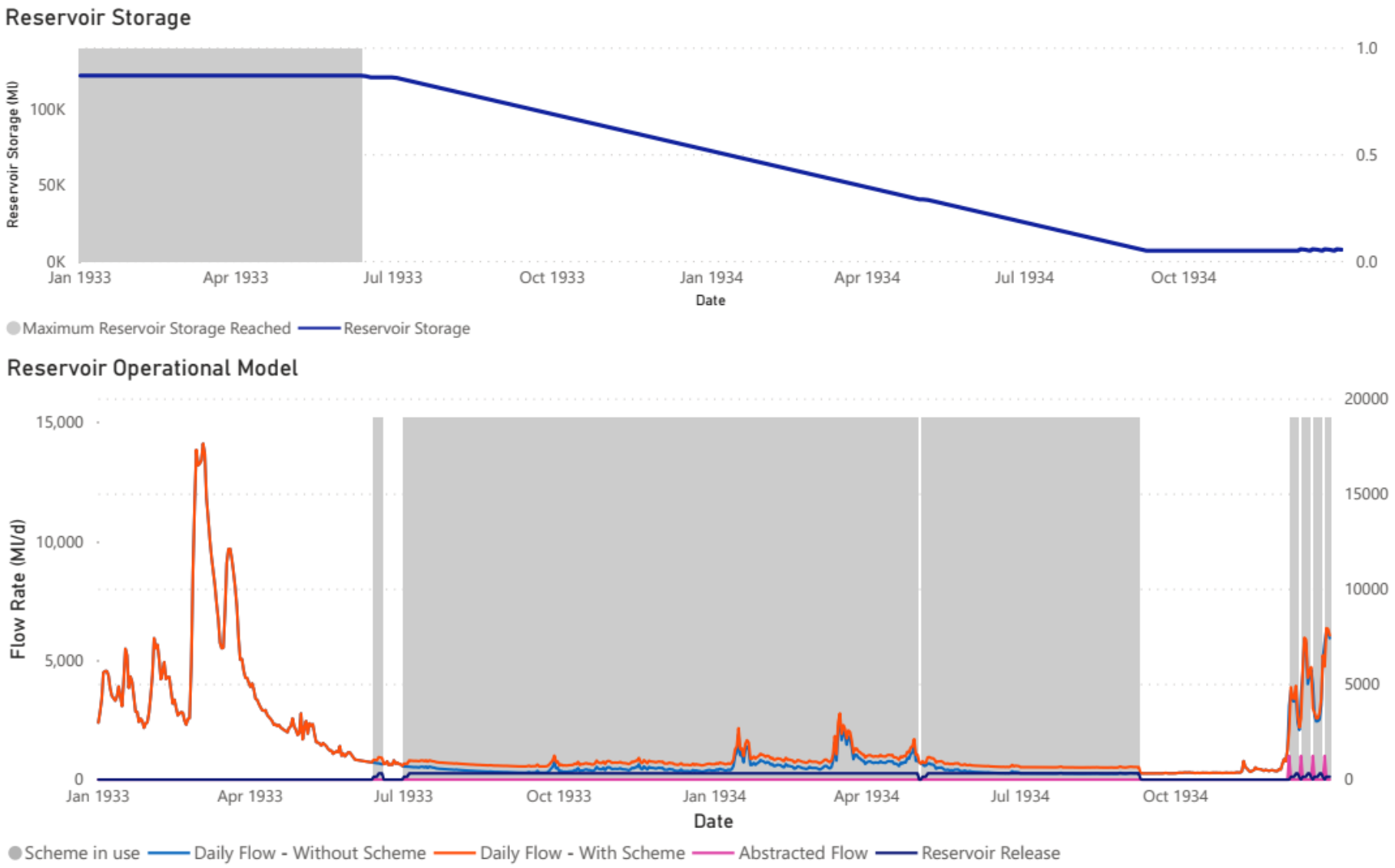
Option 6 - Reservoir storage and operations for all year's (1920-2010)



Option 6 - Reservoir storage and operations for typical non-drought (1986-88)

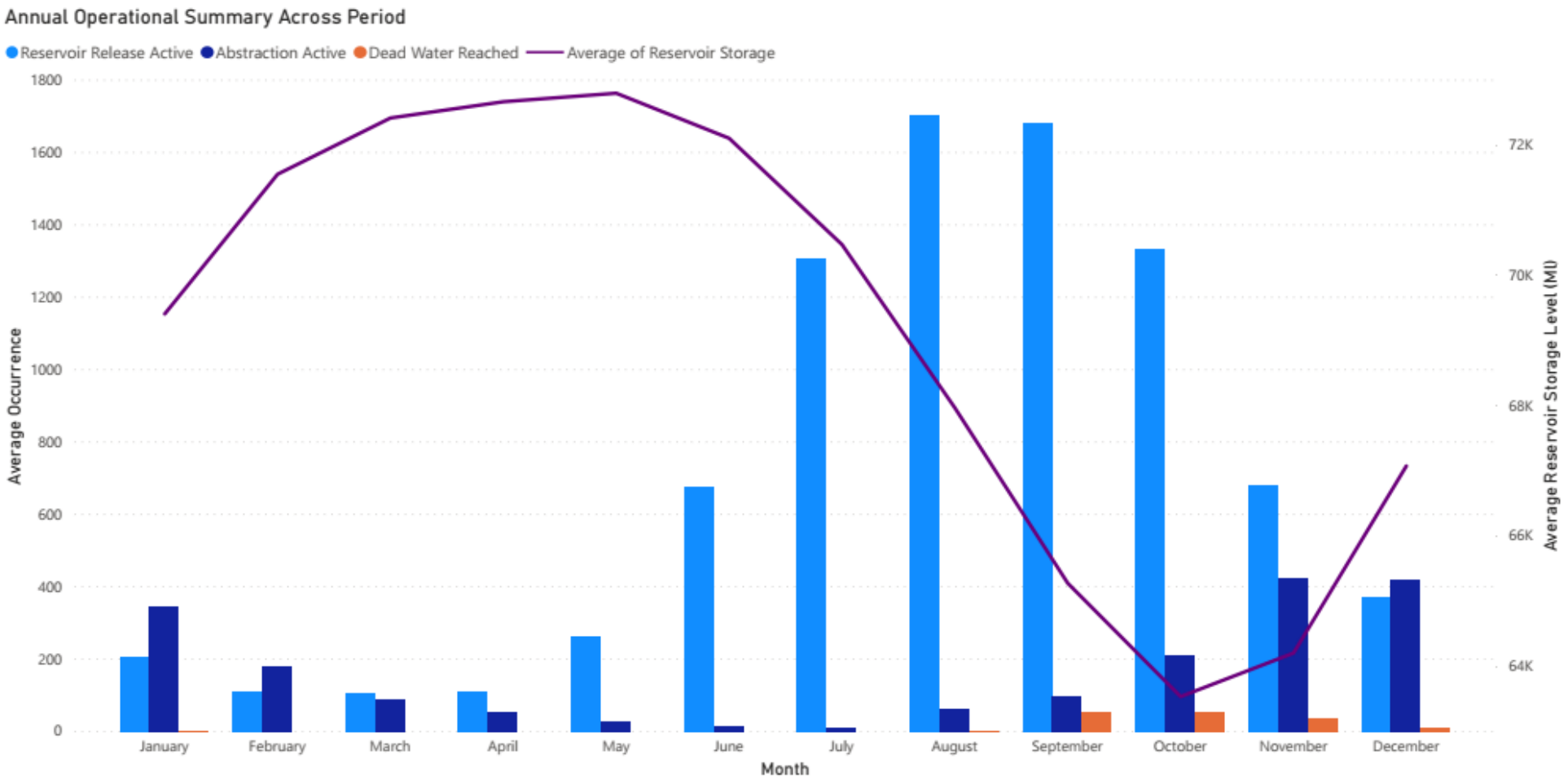


Option 6 - Reservoir storage and operations for typical drought (1996-98)

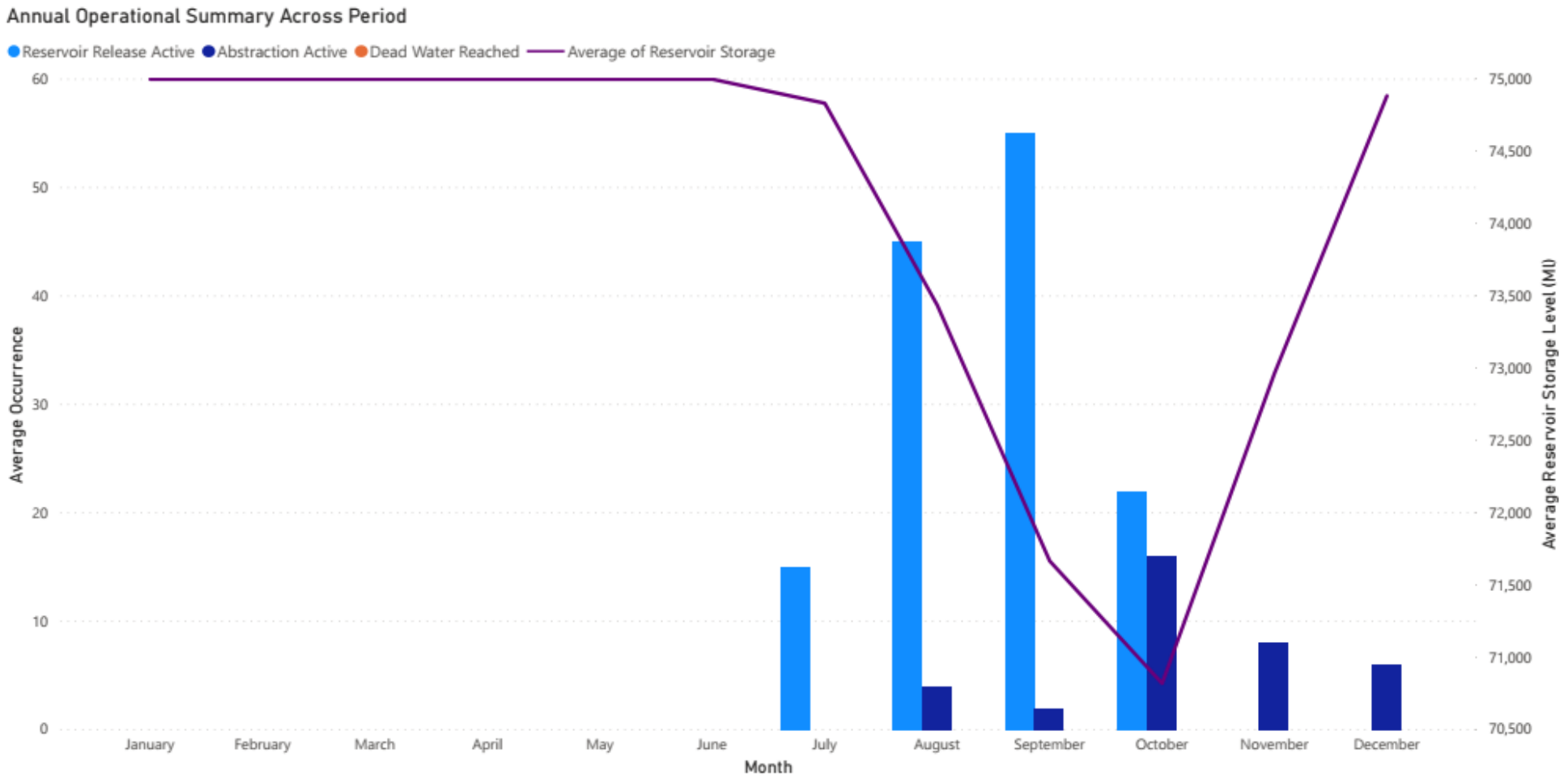


Option 6 - Reservoir storage and operations for extreme drought (1933-34)

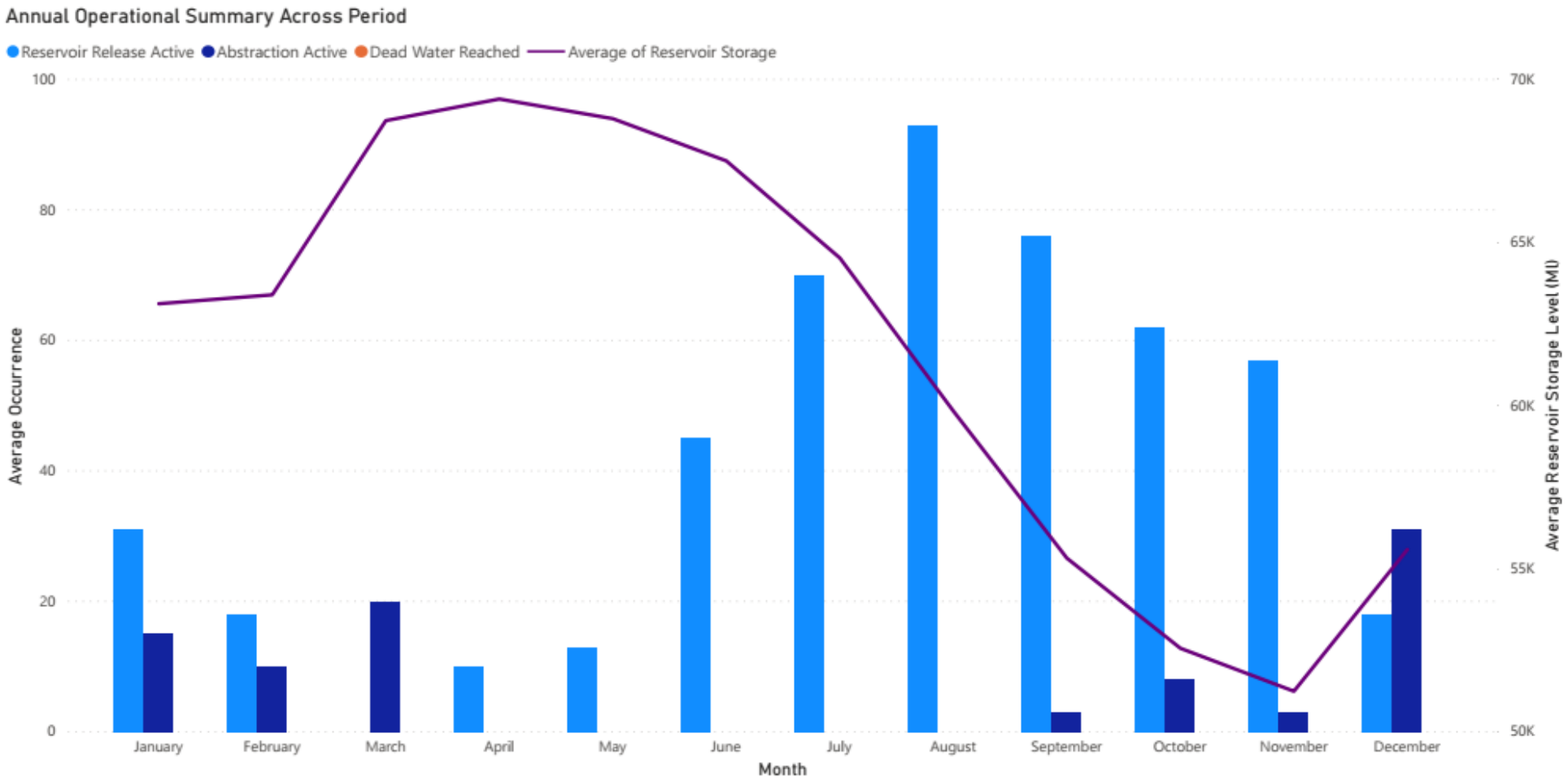
Figure 5-12 Annual Hydrological Operational Summaries



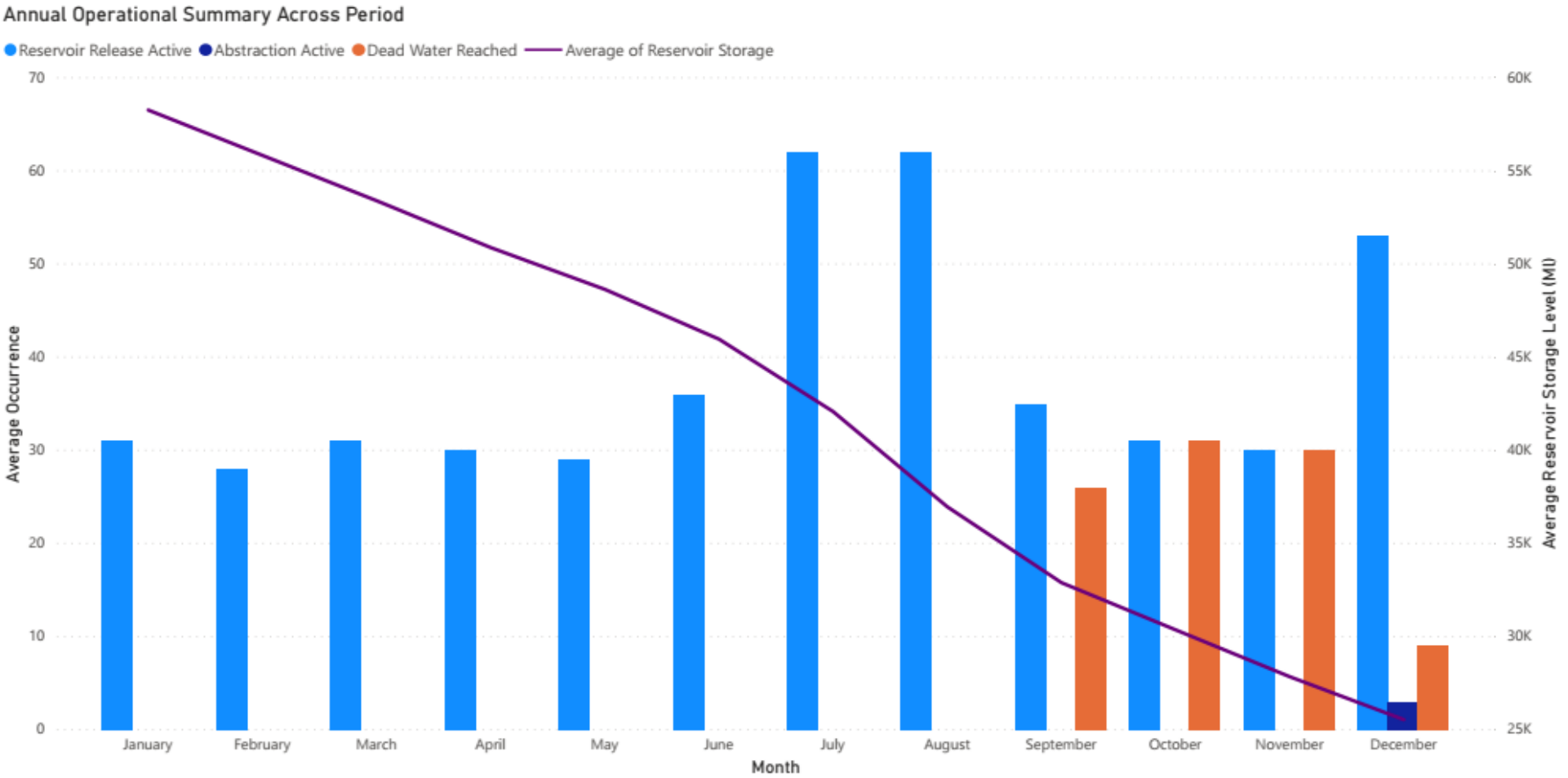
Option 1 - Annual (average) summary for all year's (1920-2010)



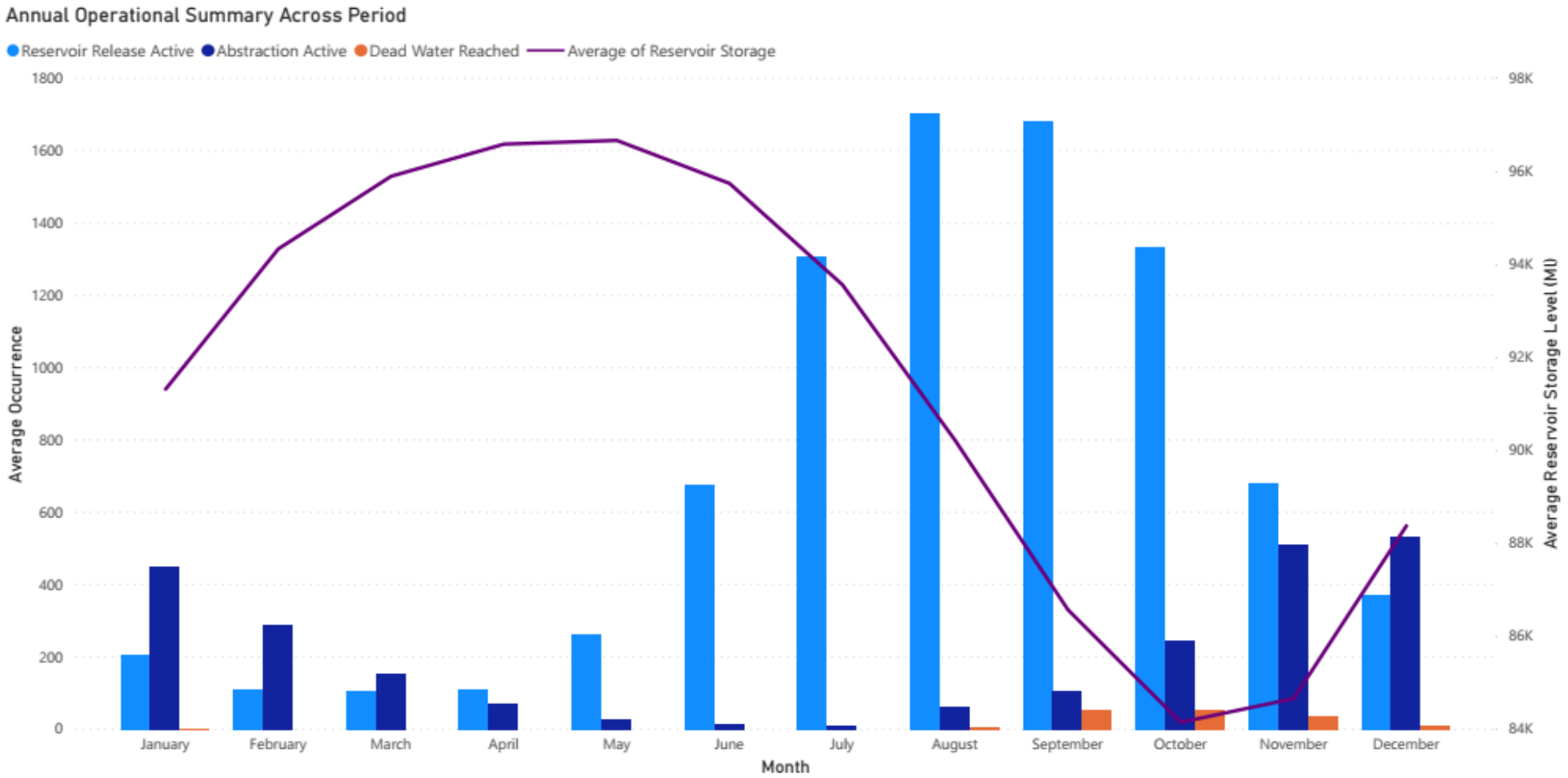
Option 1 - Annual (average) summary for typical non-drought (1986-88)



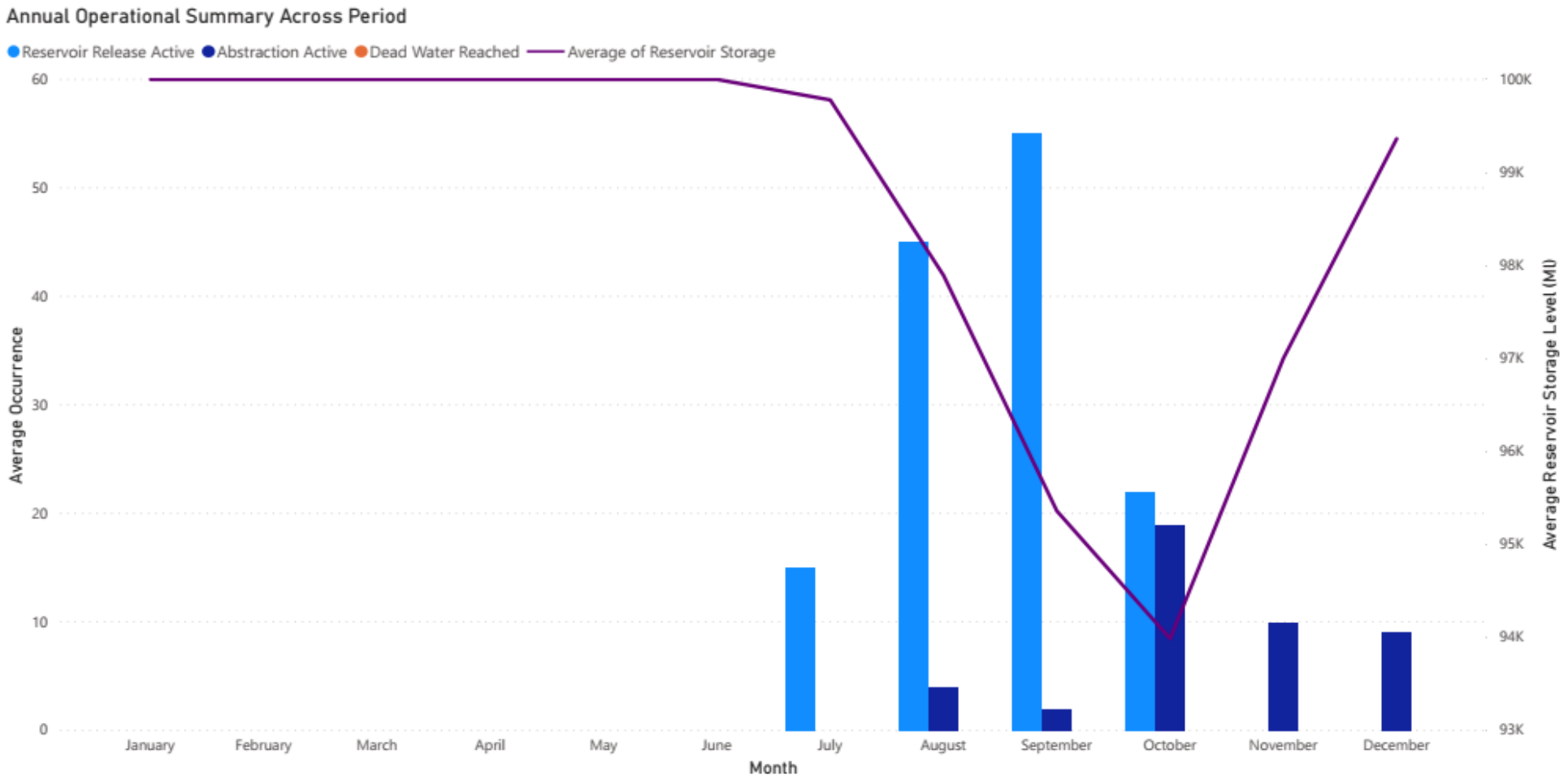
Option 1 - Annual (average) summary for typical drought (1996-98)



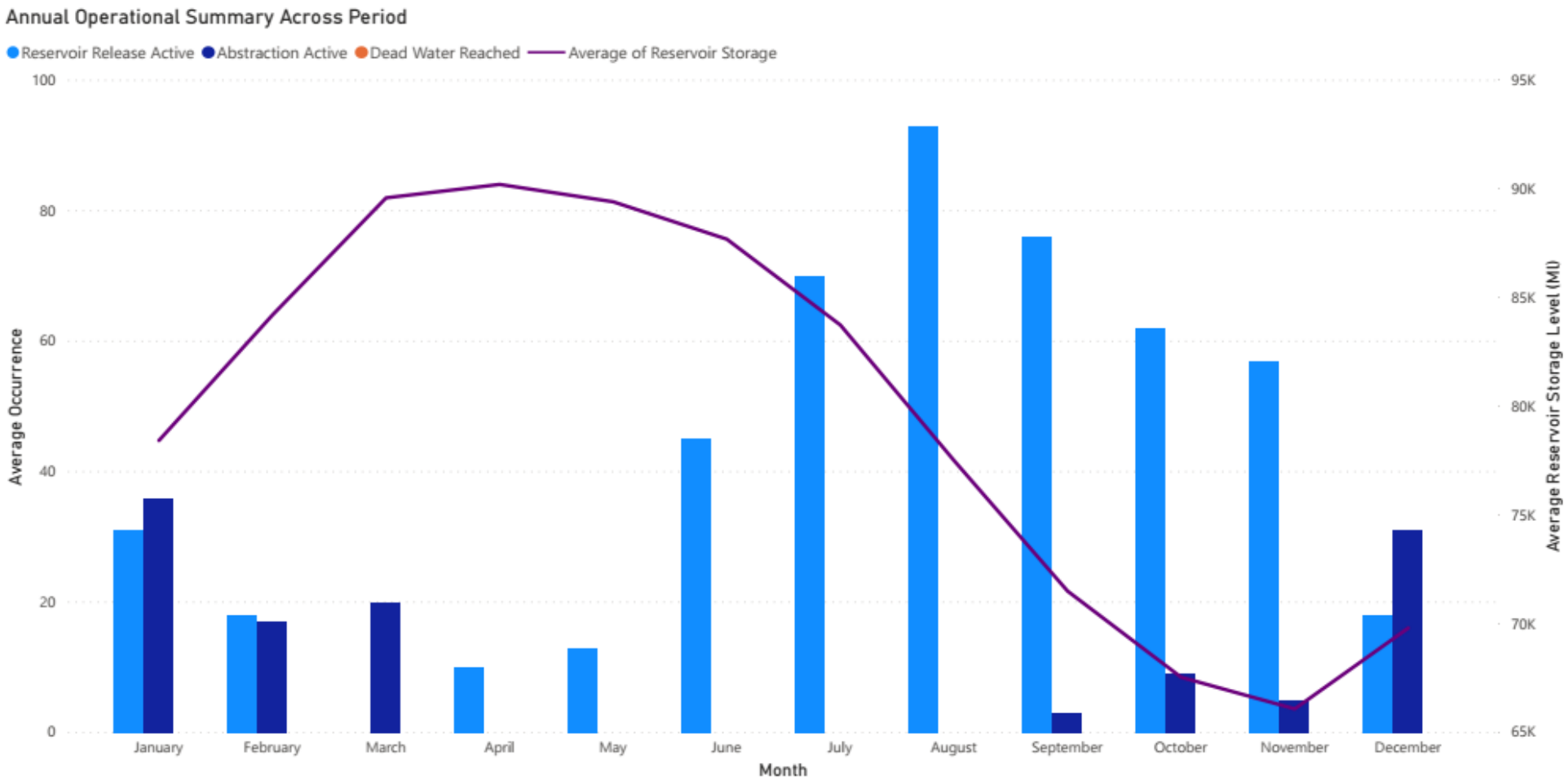
Option 1 - Annual (average) summary for extreme drought (1933-34)



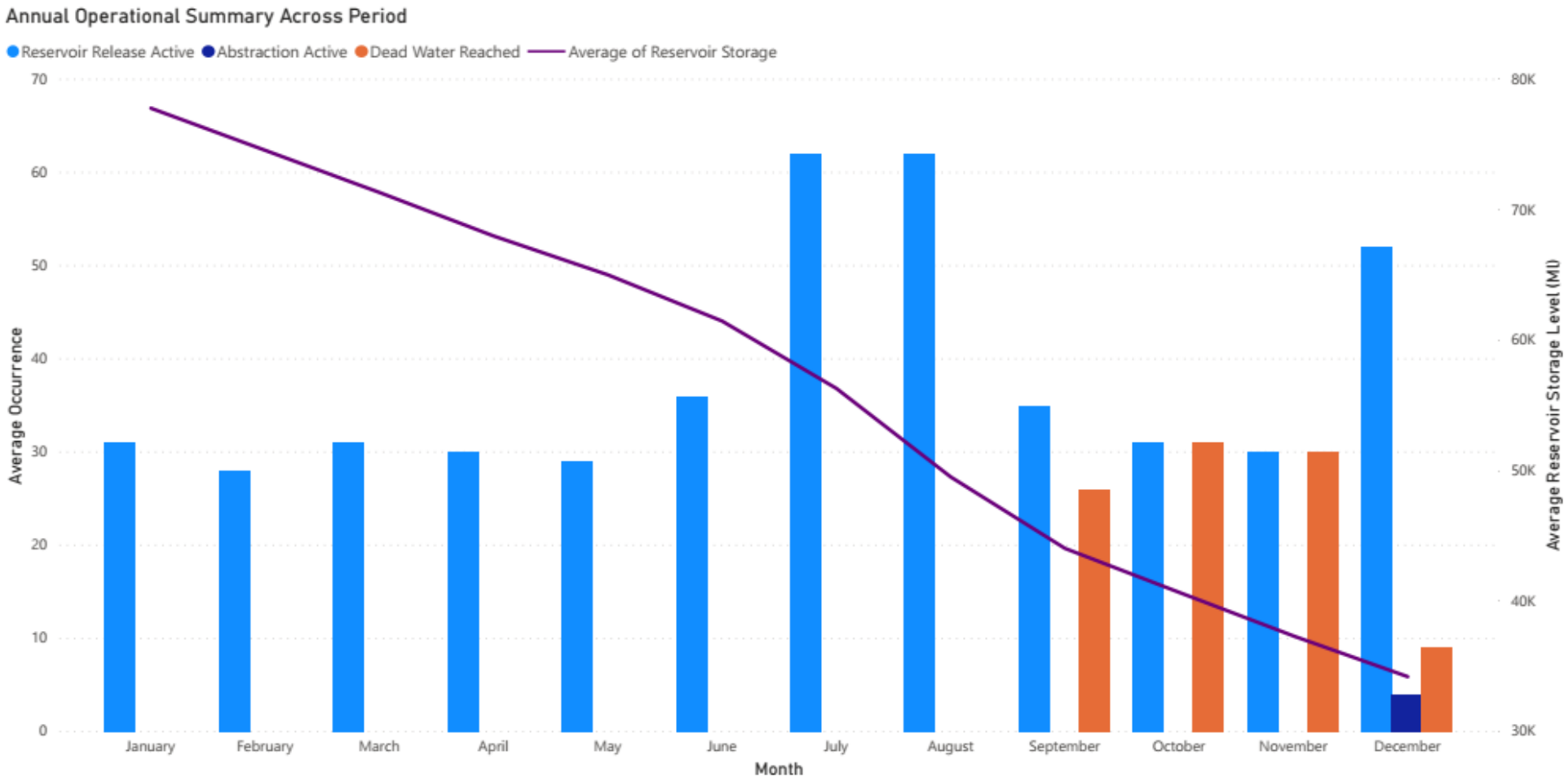
Option 2 - Annual (average) summary for all year's (1920-2010)



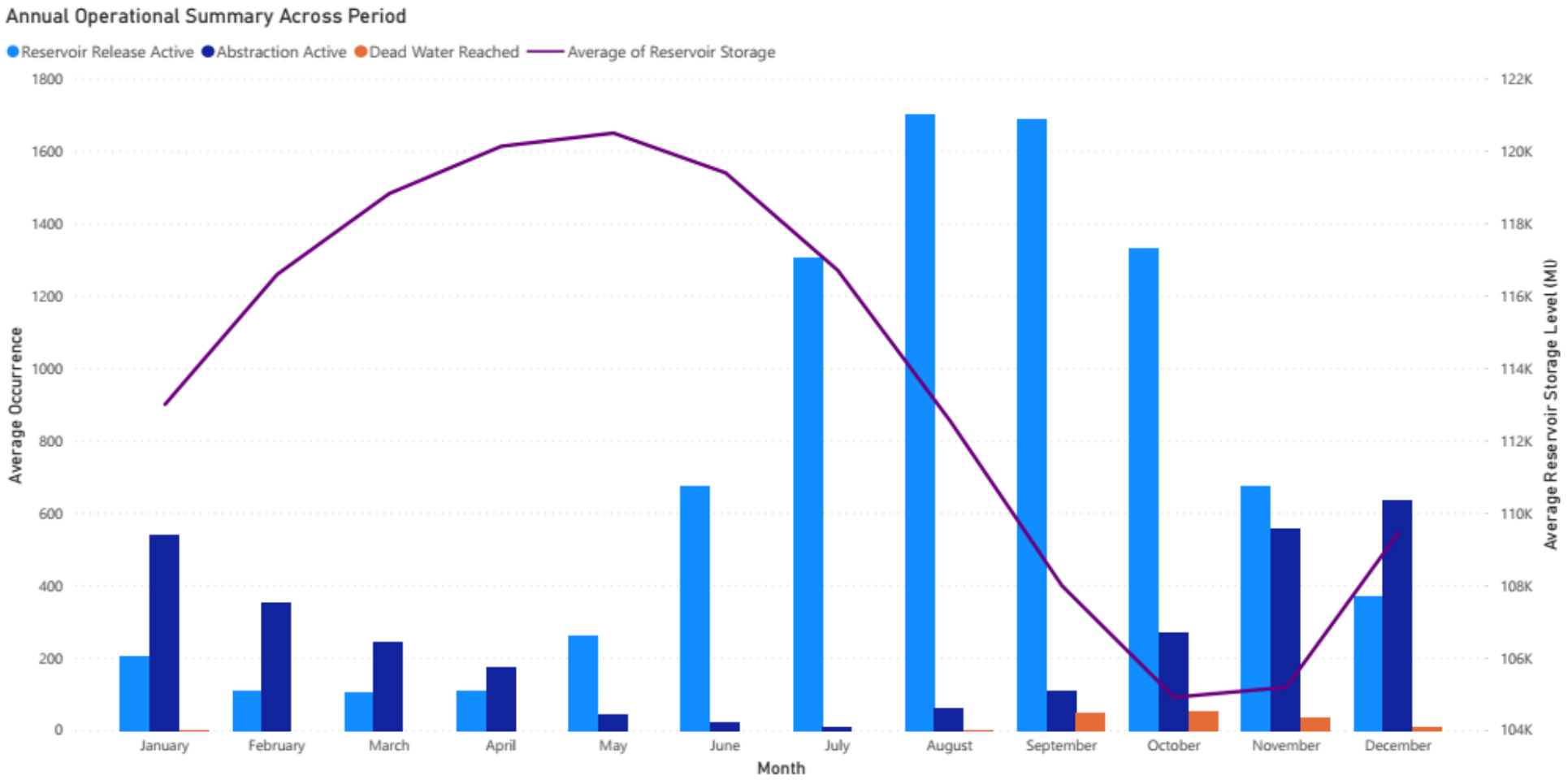
Option 2 - Annual (average) summary for typical non-drought (1986-88)



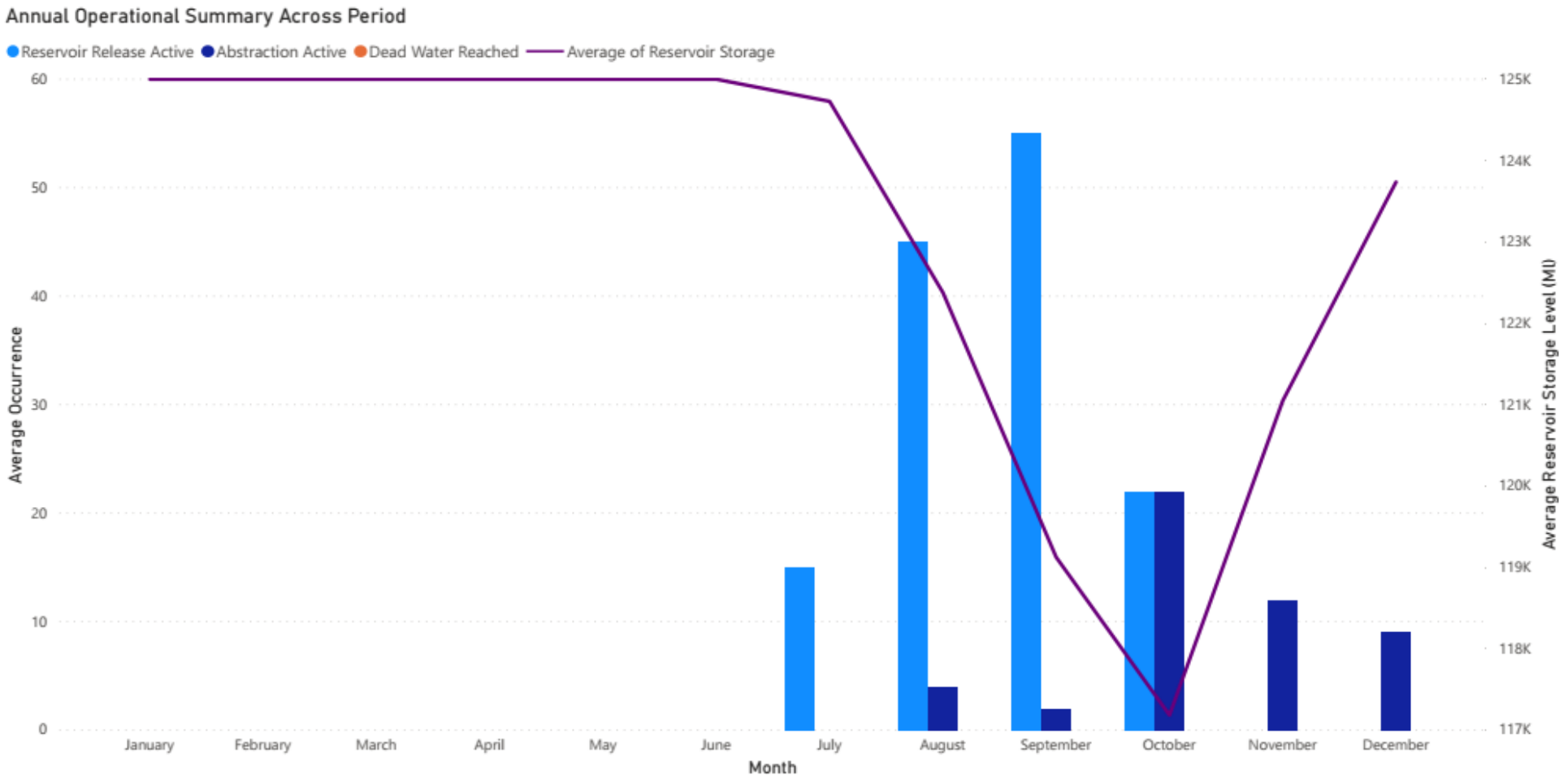
Option 2 - Annual (average) summary for typical drought (1996-98)



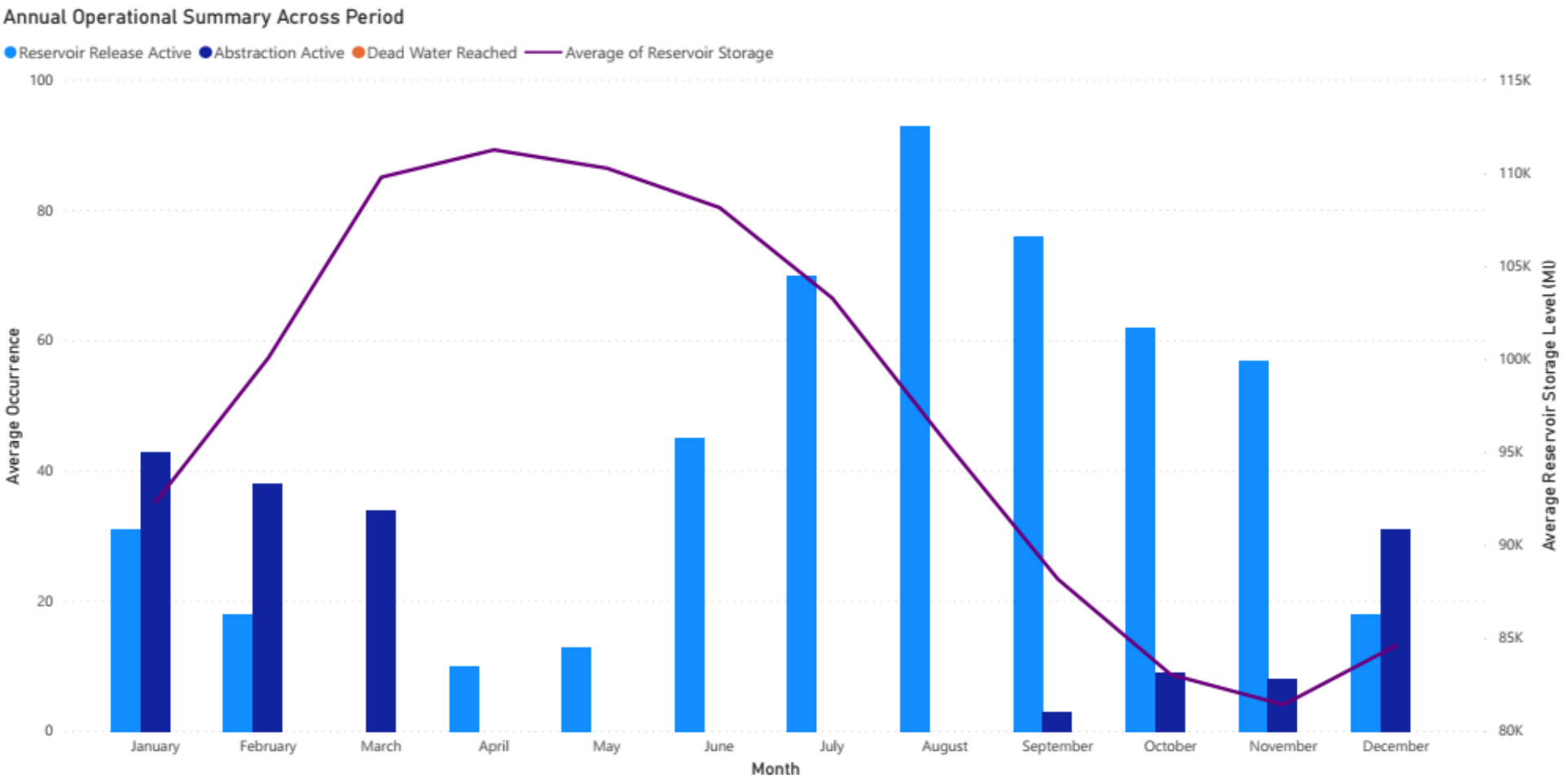
Option 2 - Annual (average) summary for extreme drought (1933-34)



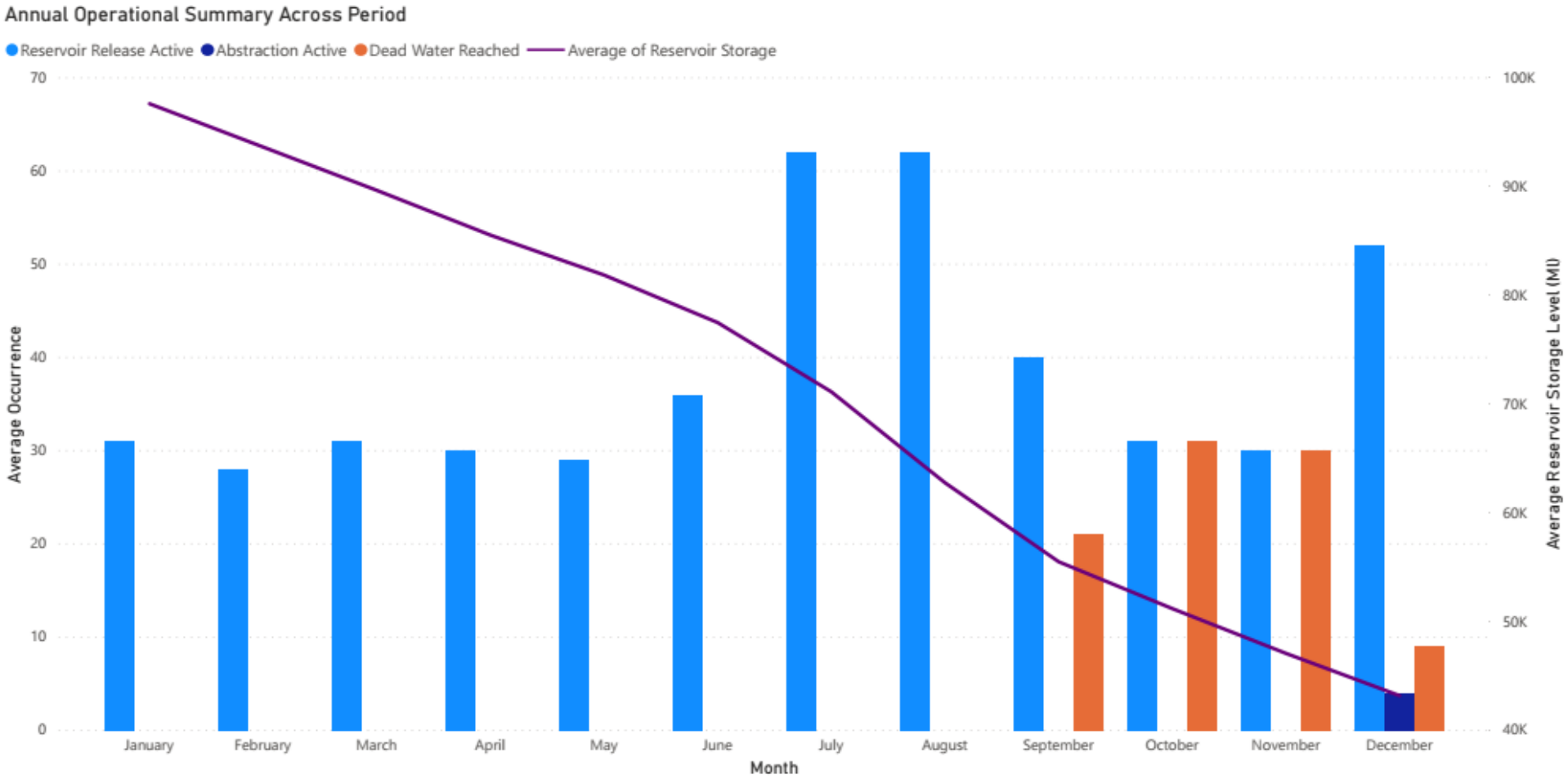
Option 3 - Annual (average) summary for all year's (1920-2010)



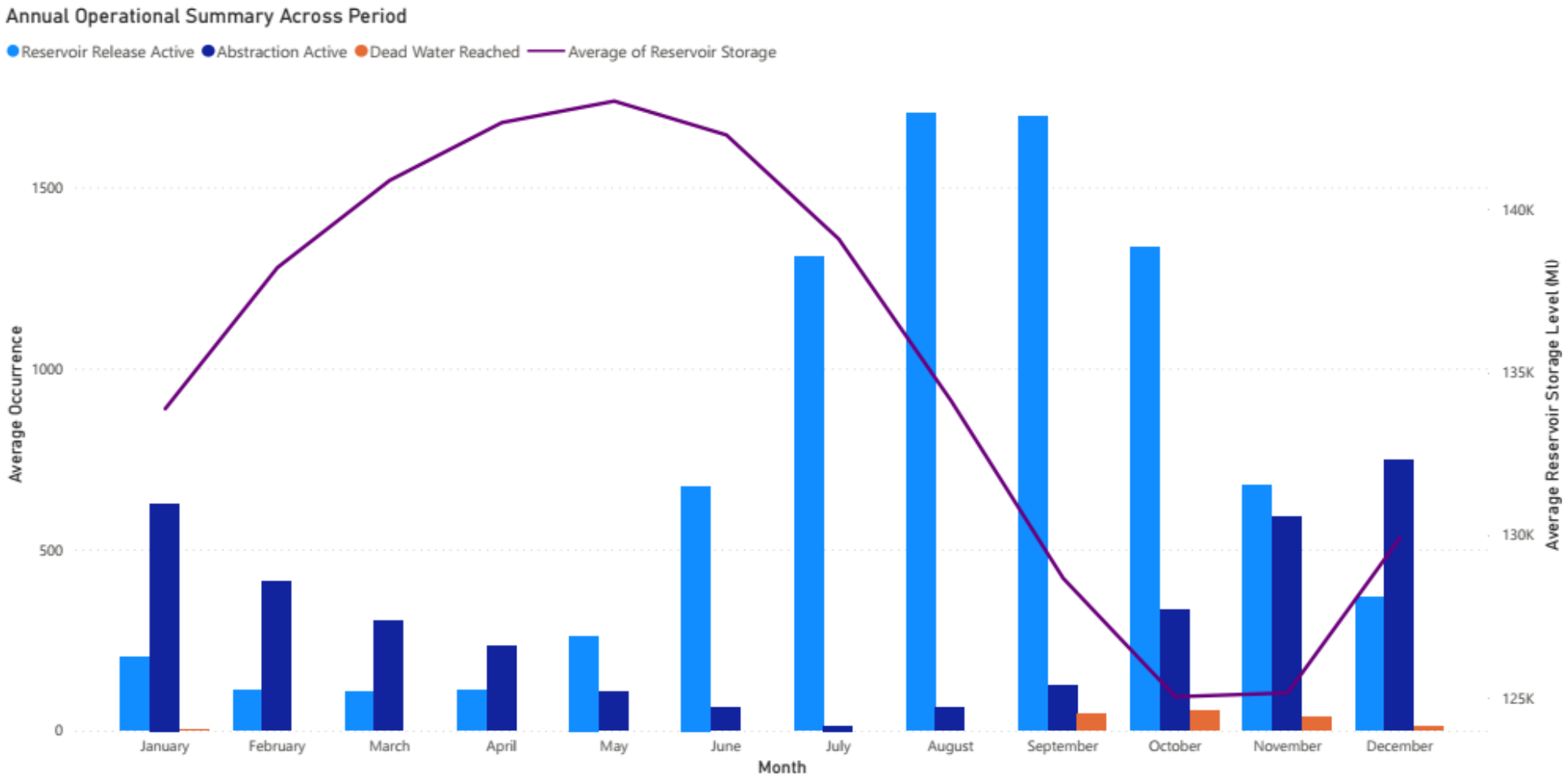
Option 3 - Annual (average) summary for typical non-drought (1986-88)



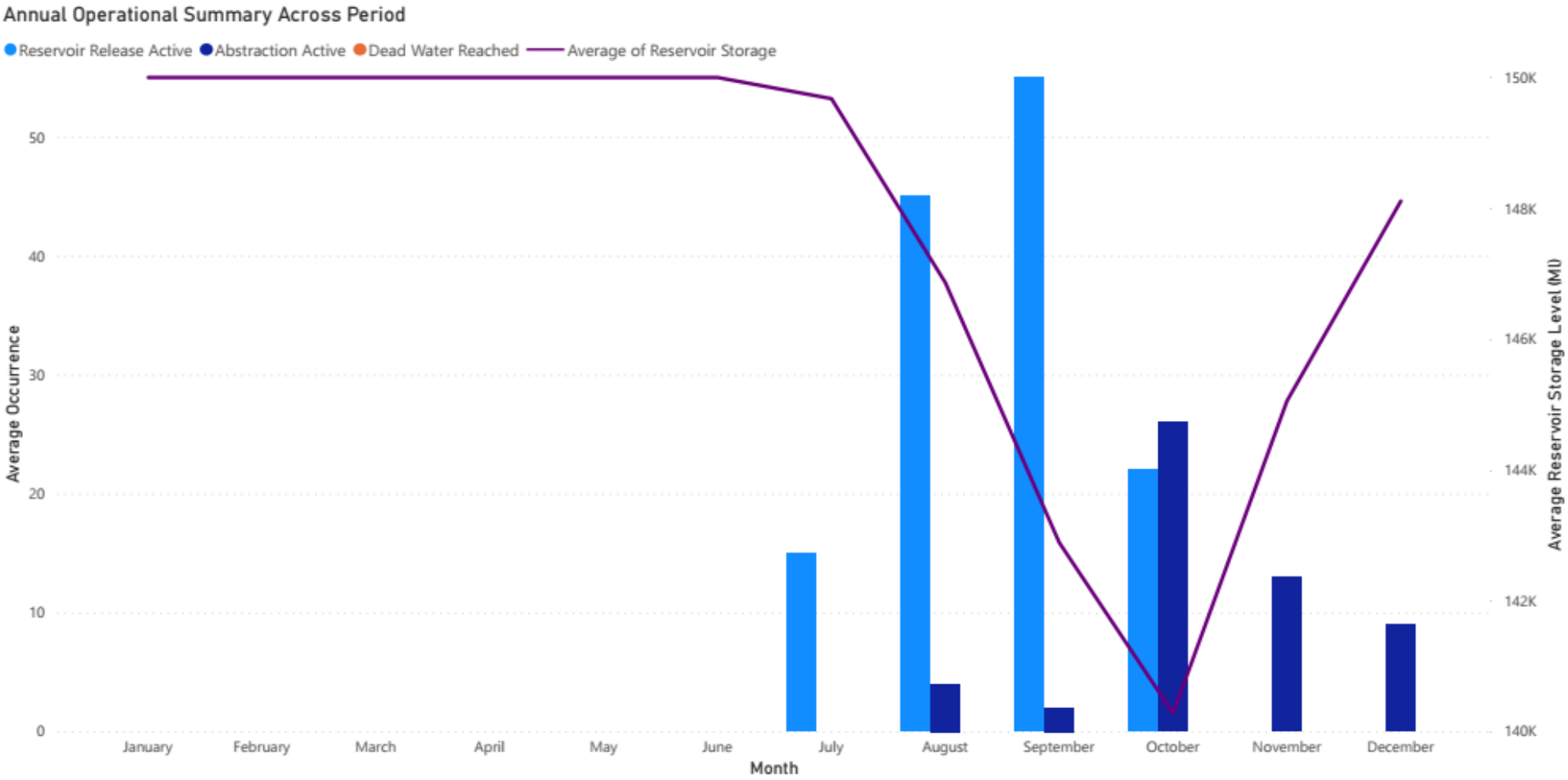
Option 3 - Annual (average) summary for typical drought (1996-98)



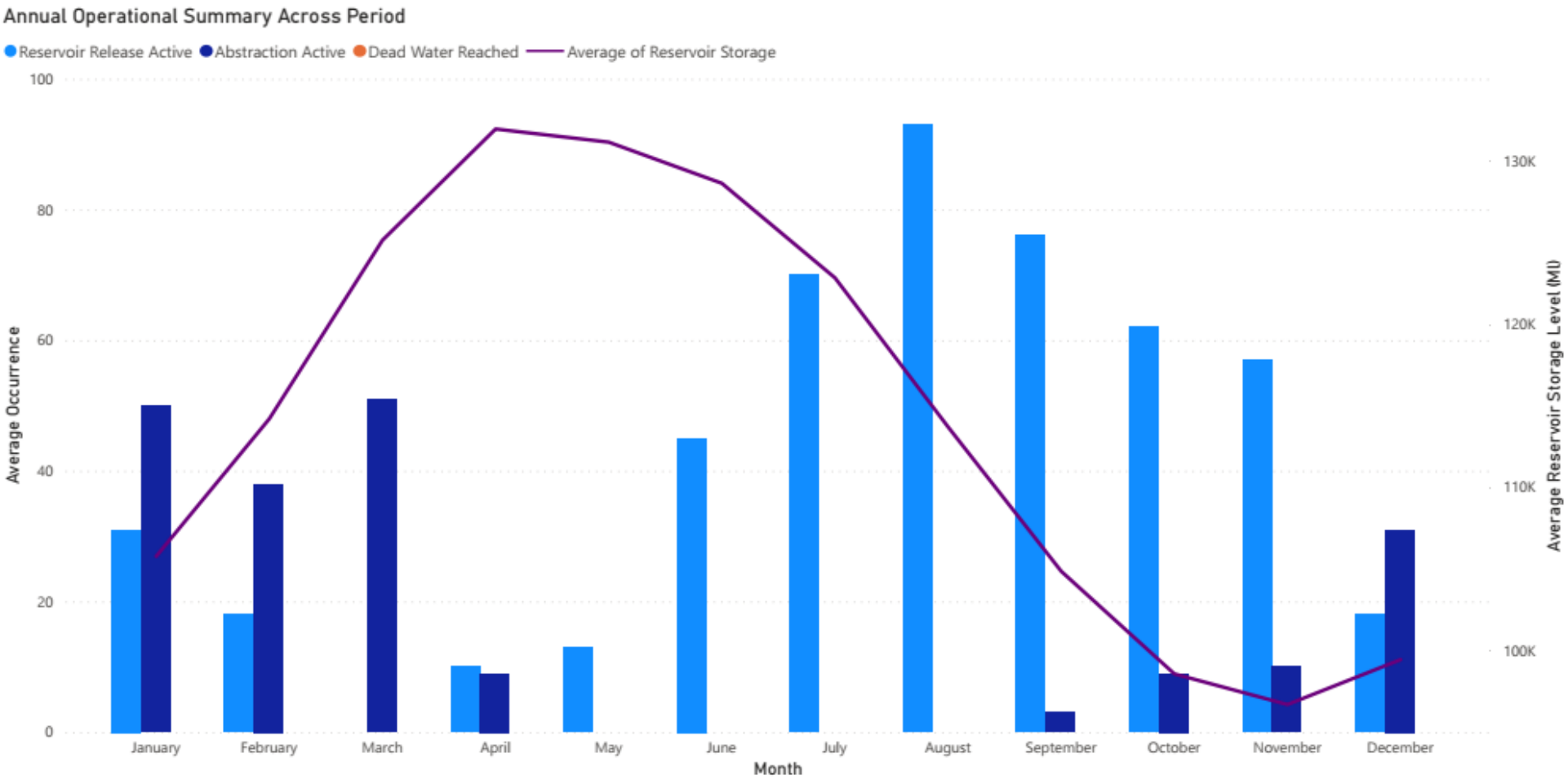
Option 3 - Annual (average) summary for extreme drought (1933-34)



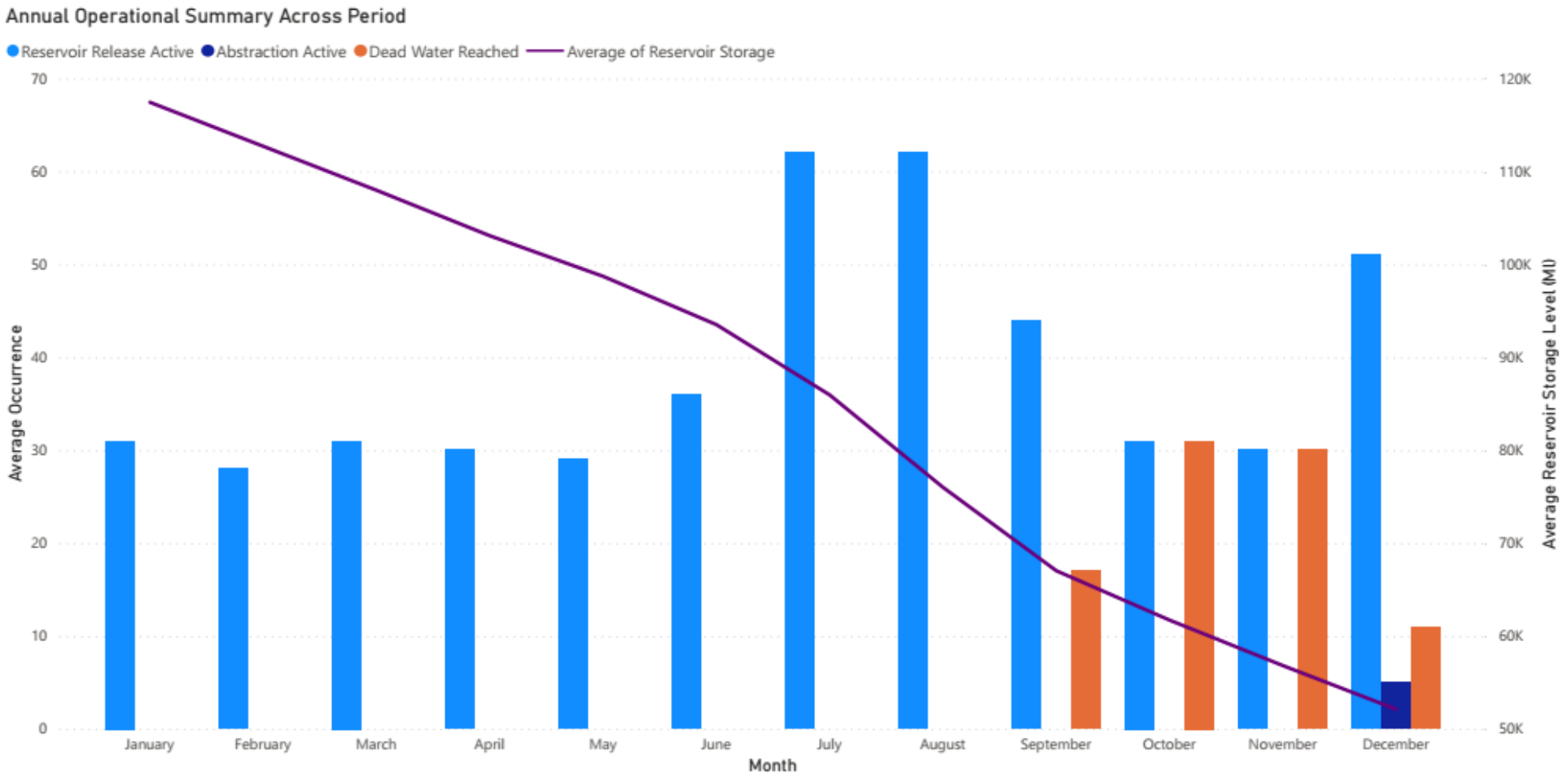
Option 4a - Annual (average) summary for all year's (1920-2010)



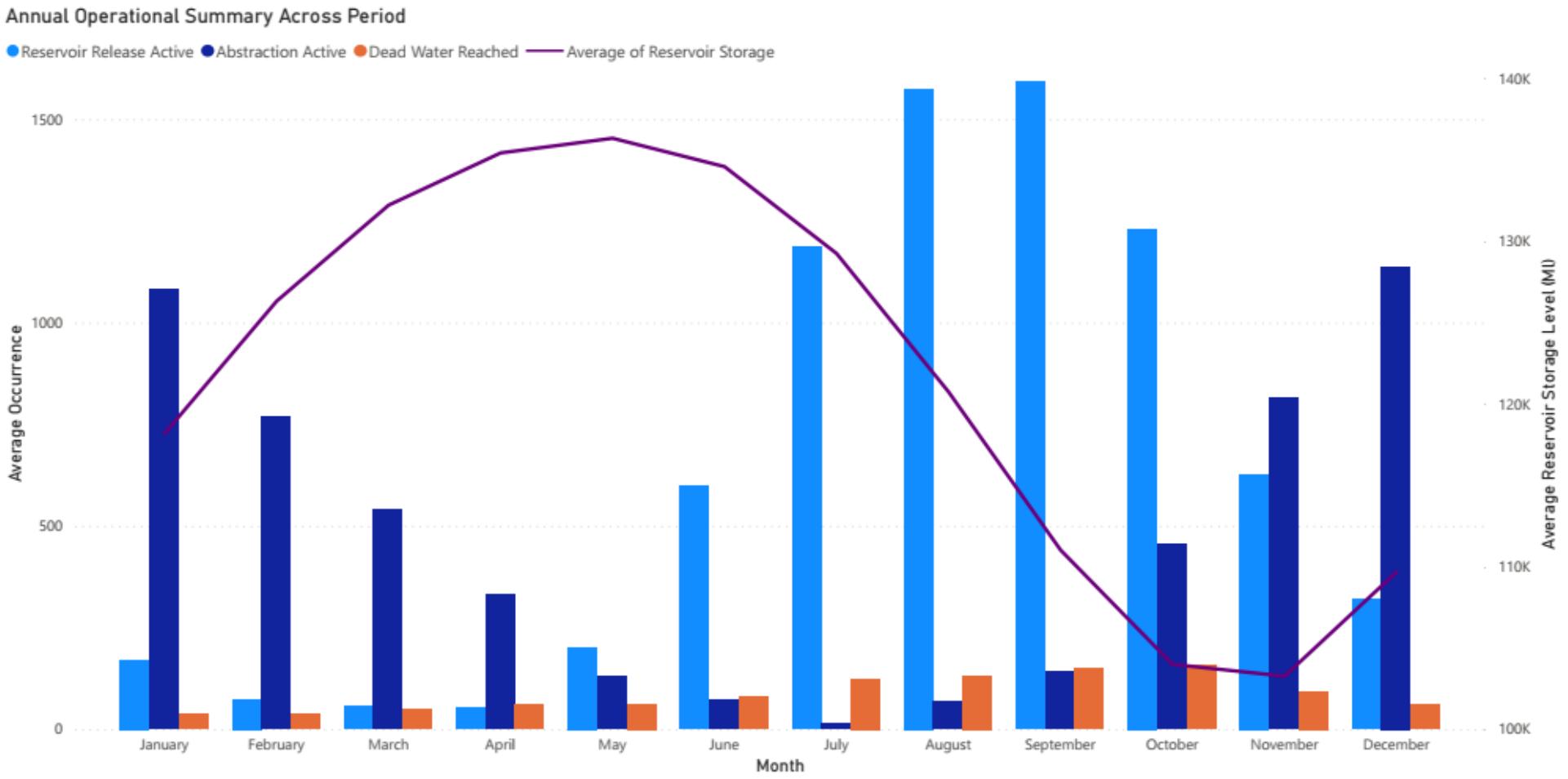
Option 4a - Annual (average) summary for typical non-drought (1986-88)



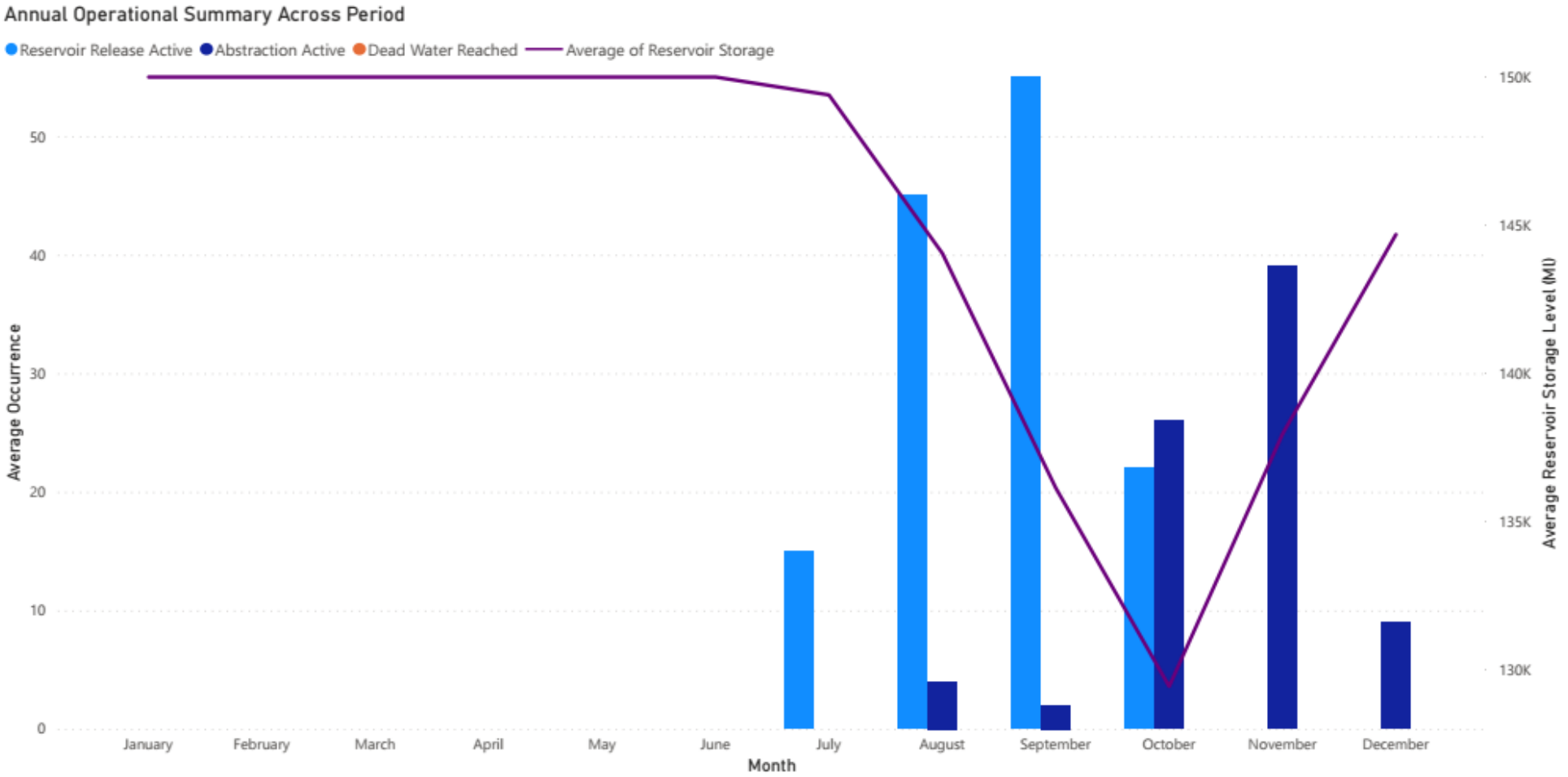
Option 4a - Annual (average) summary for typical drought (1996-98)



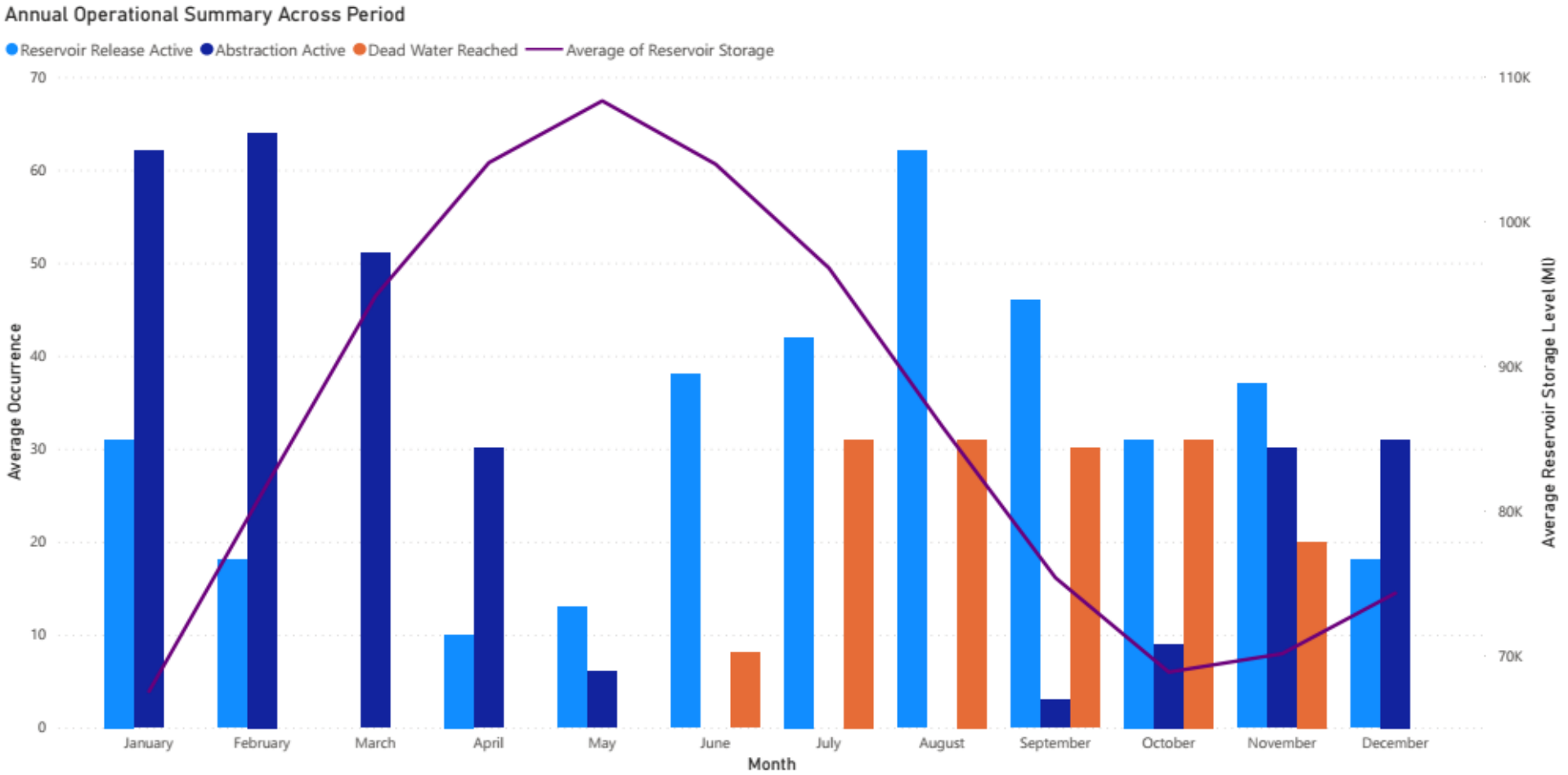
Option 4a - Annual (average) summary for extreme drought (1933-34)



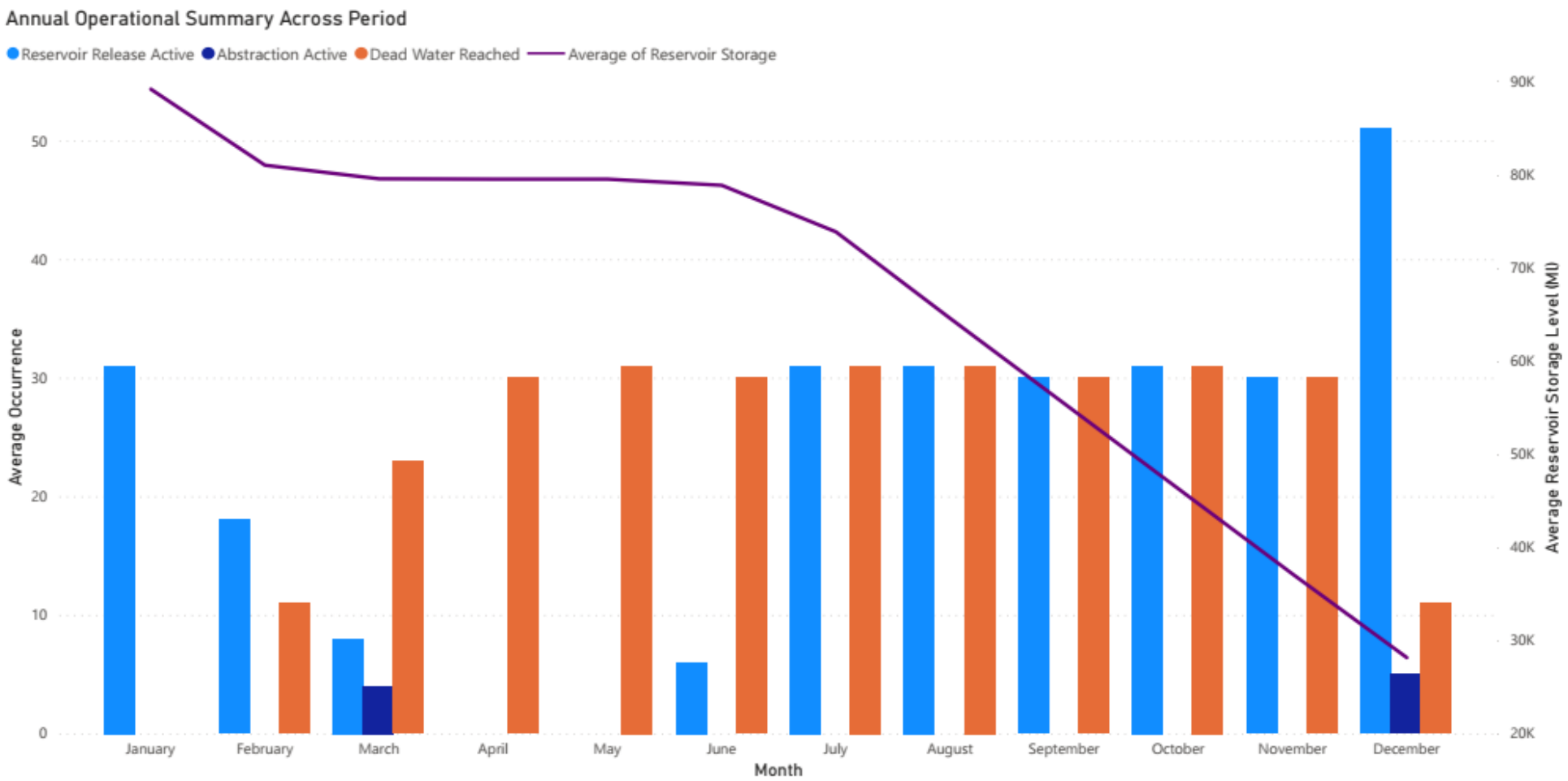
Option 4b - Annual (average) summary for all year's (1920-2010)



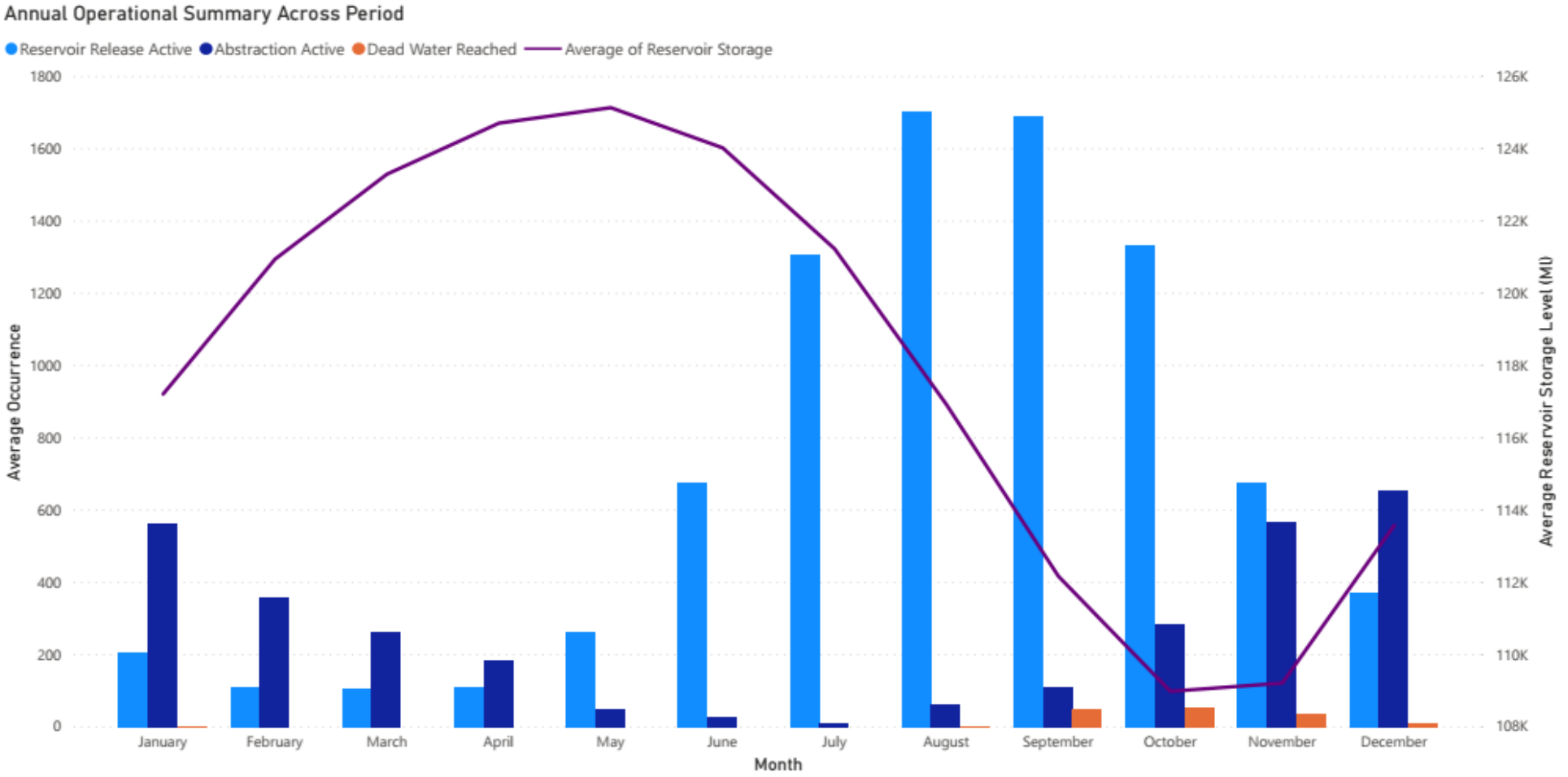
Option 4b - Annual (average) summary for typical non-drought (1986-88)



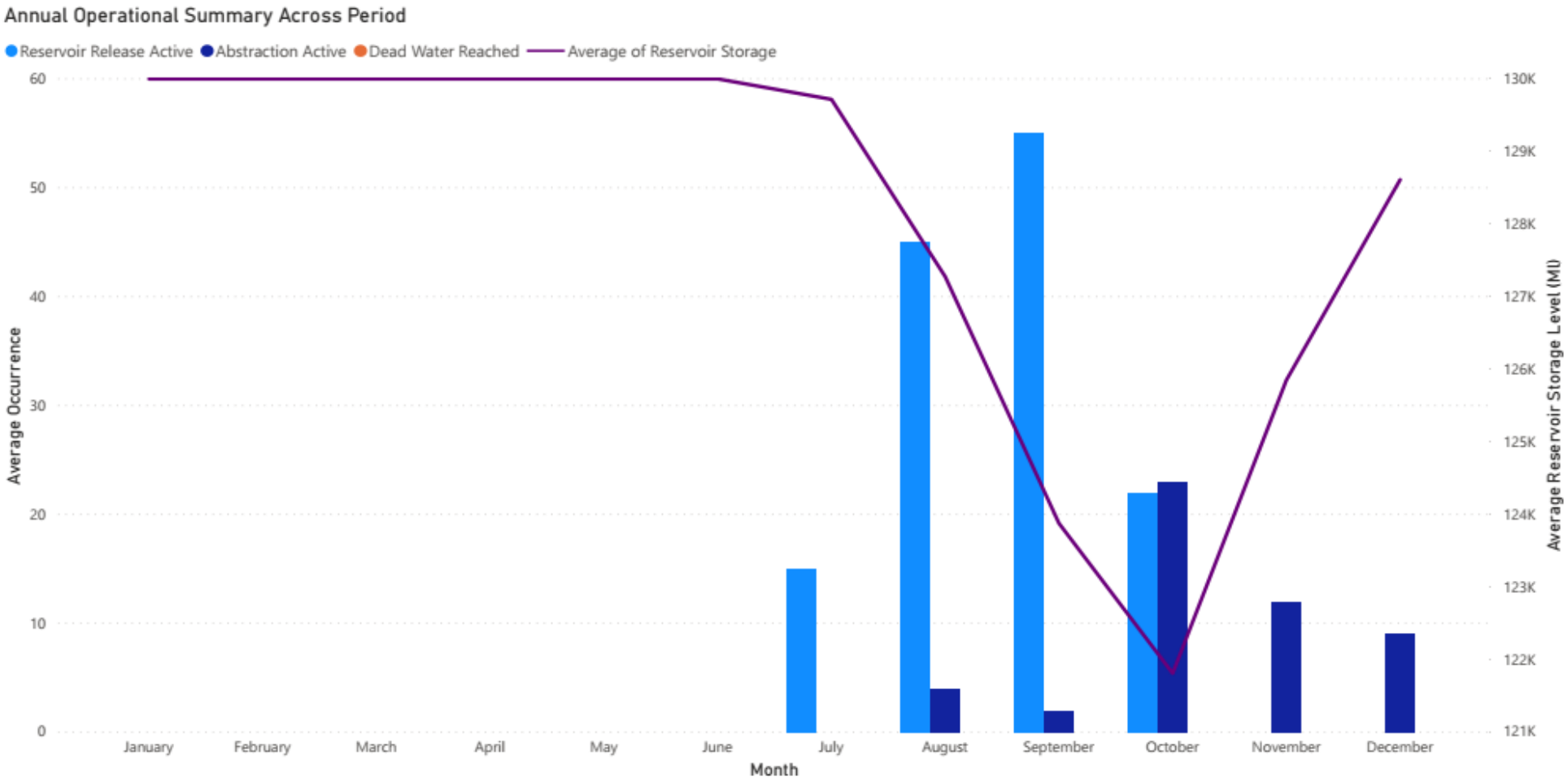
Option 4b - Annual (average) summary for typical drought (1996-98)



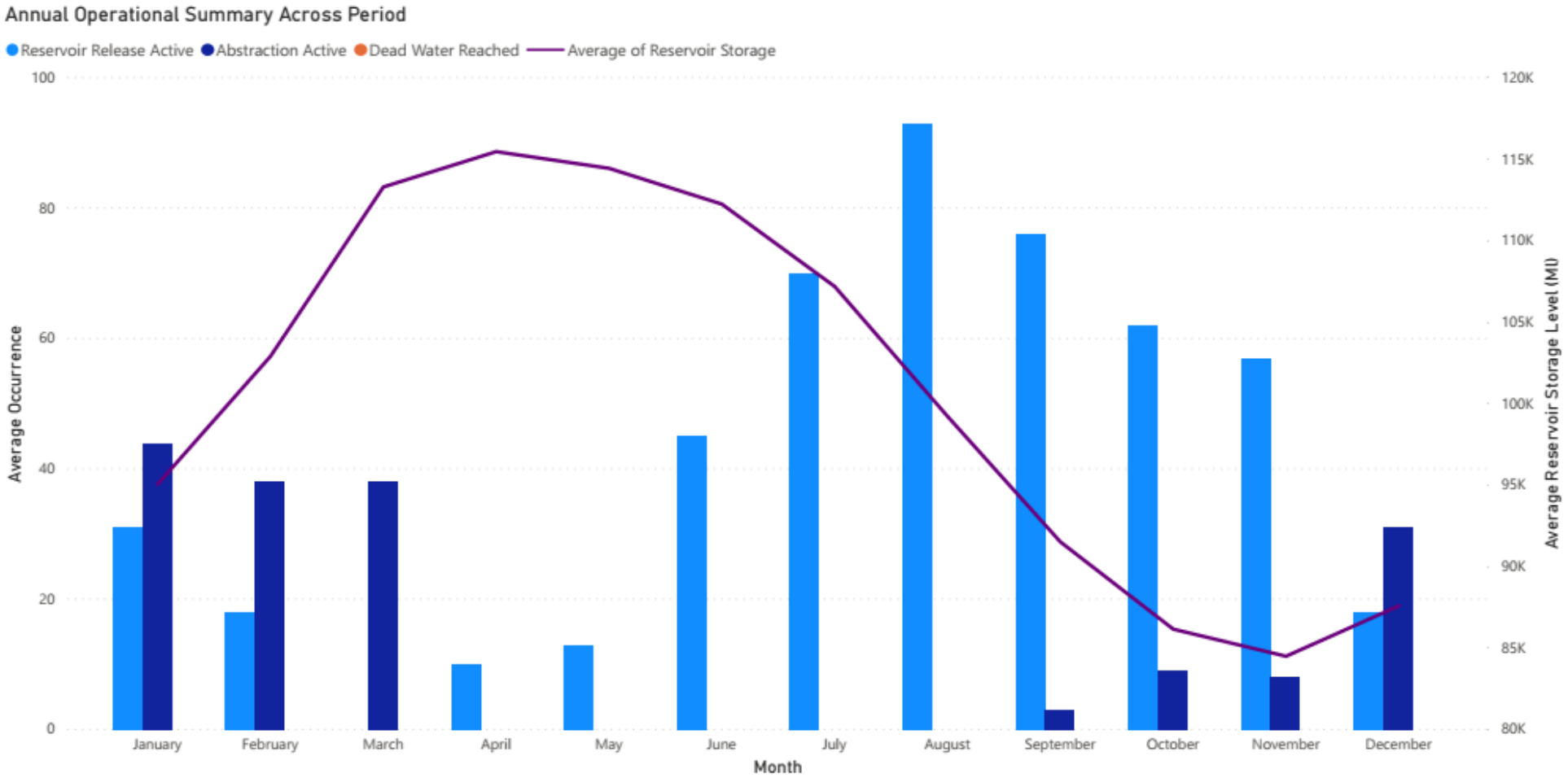
Option 4b - Annual (average) summary for extreme drought (1933-34)



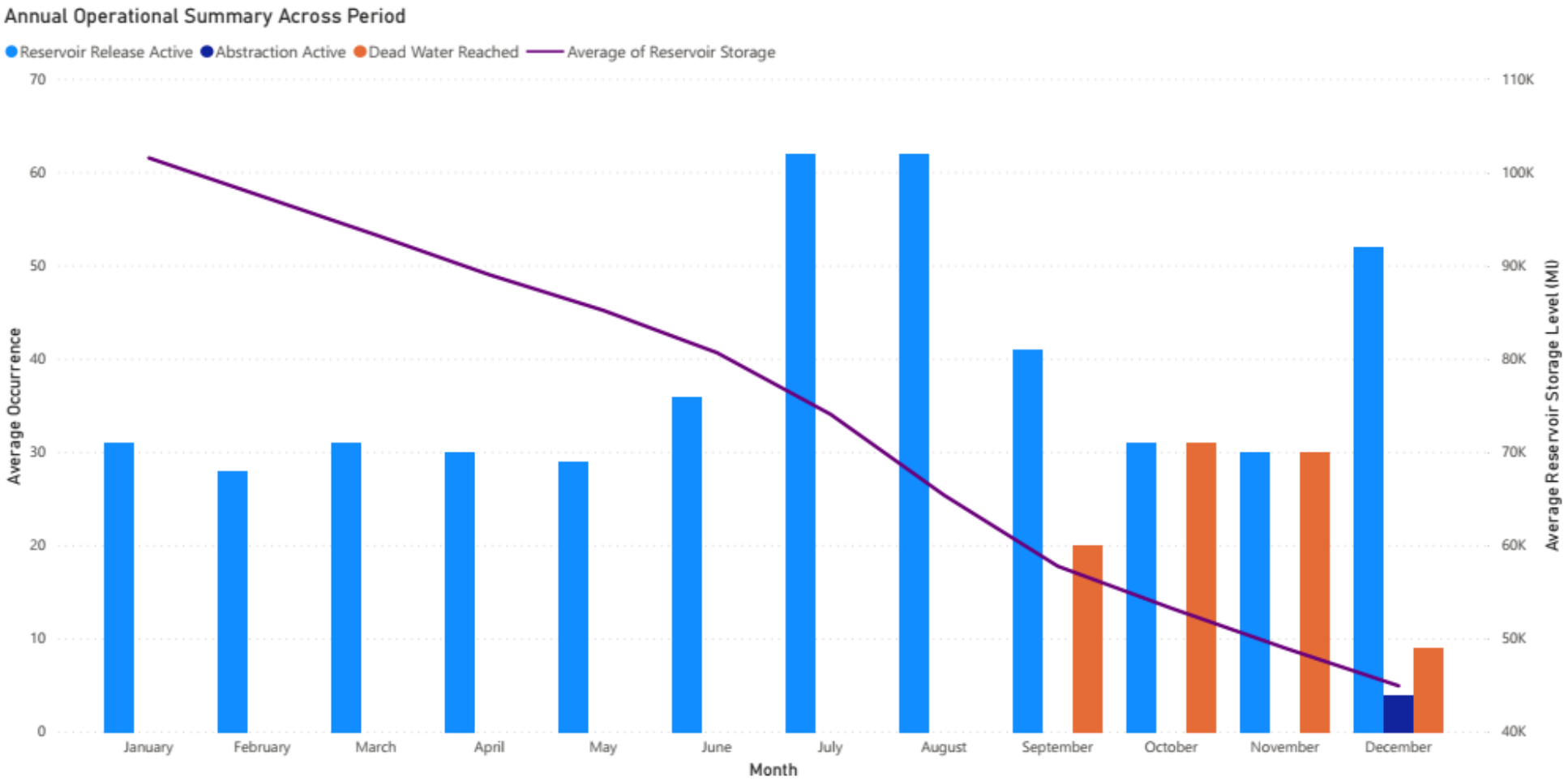
Option 5 - Annual (average) summary for all year's (1920-2010)



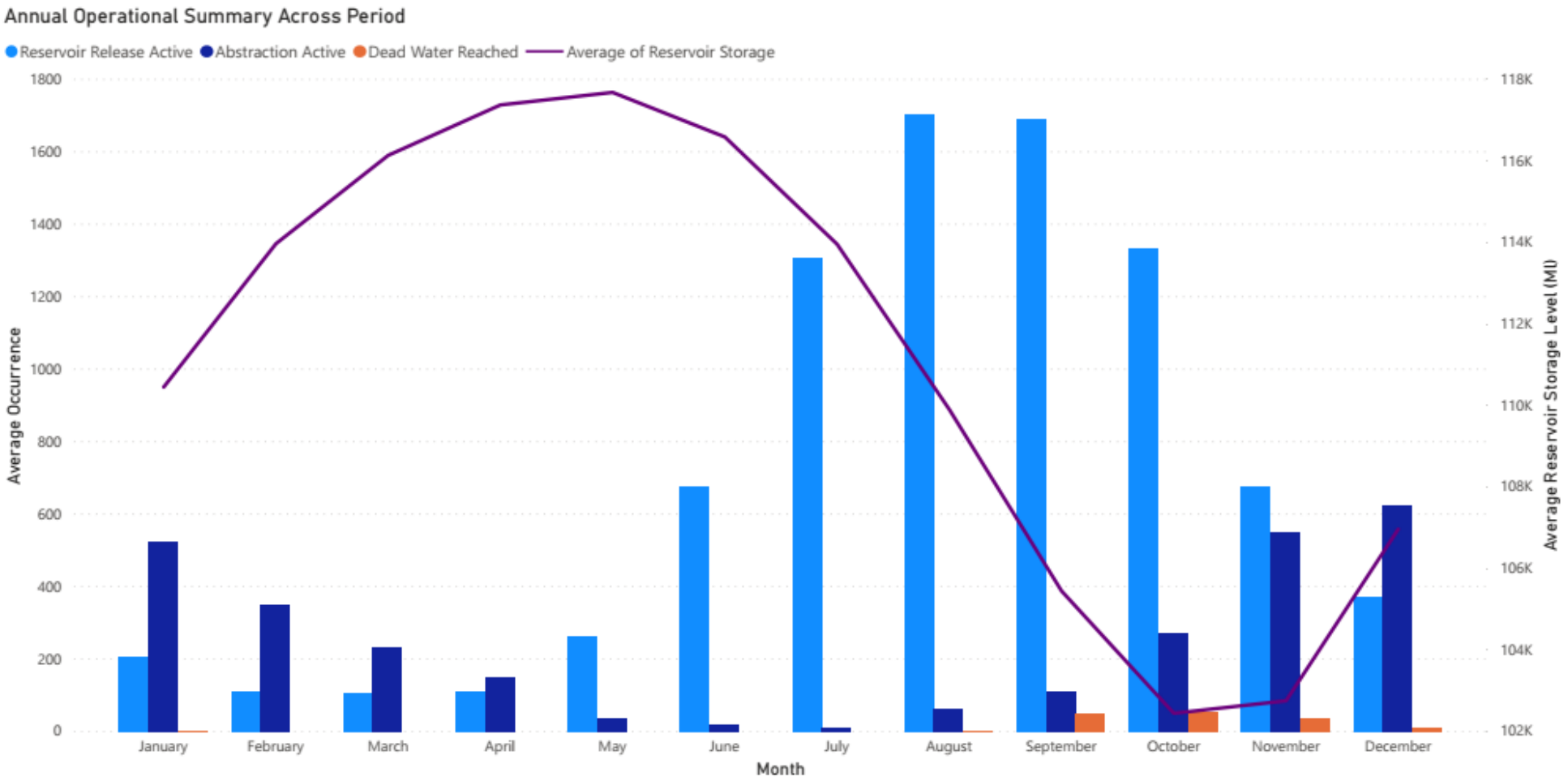
Option 5 - Annual (average) summary for typical non-drought (1986-88)



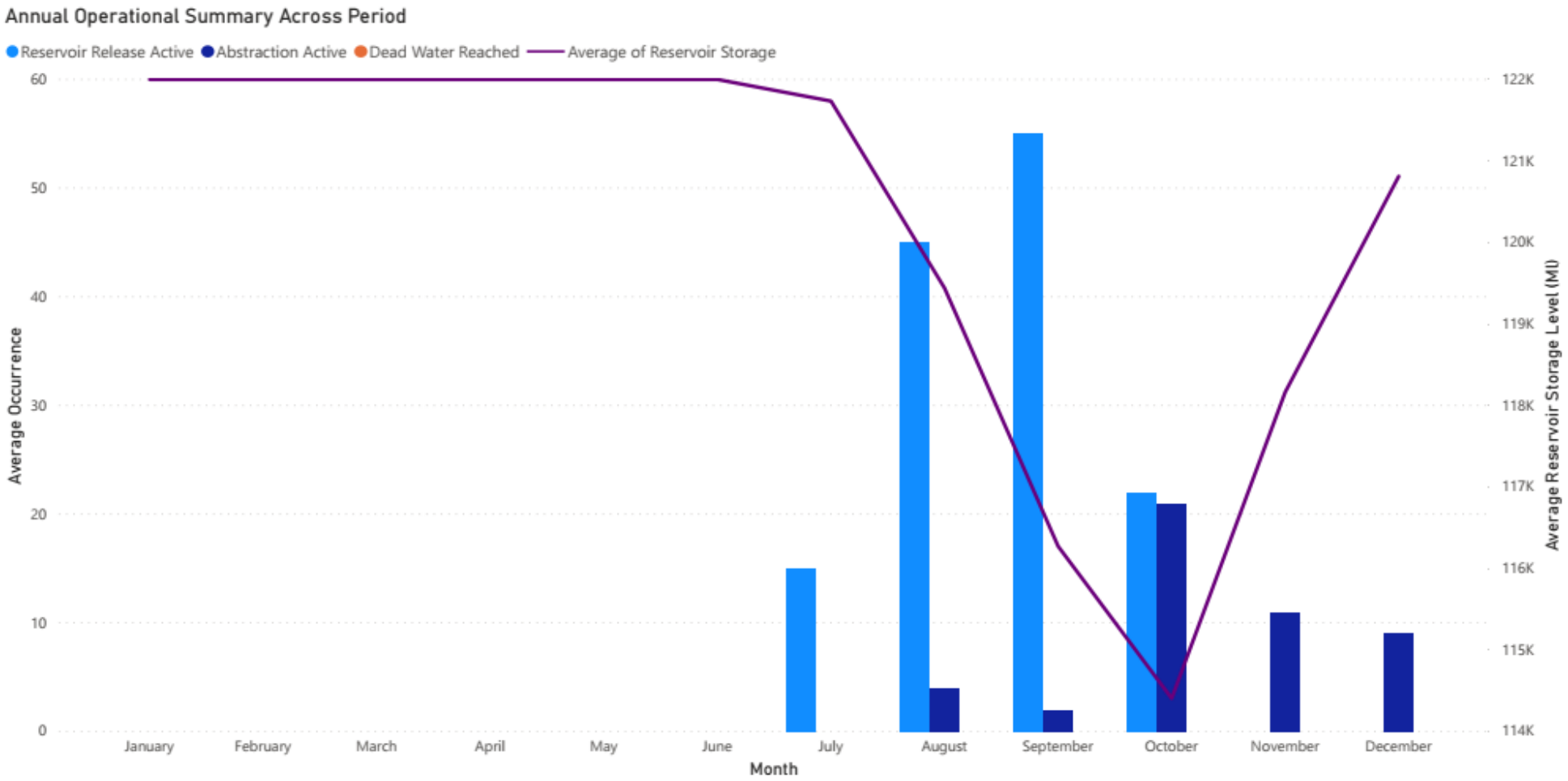
Option 5 - Annual (average) summary for typical drought (1996-98)



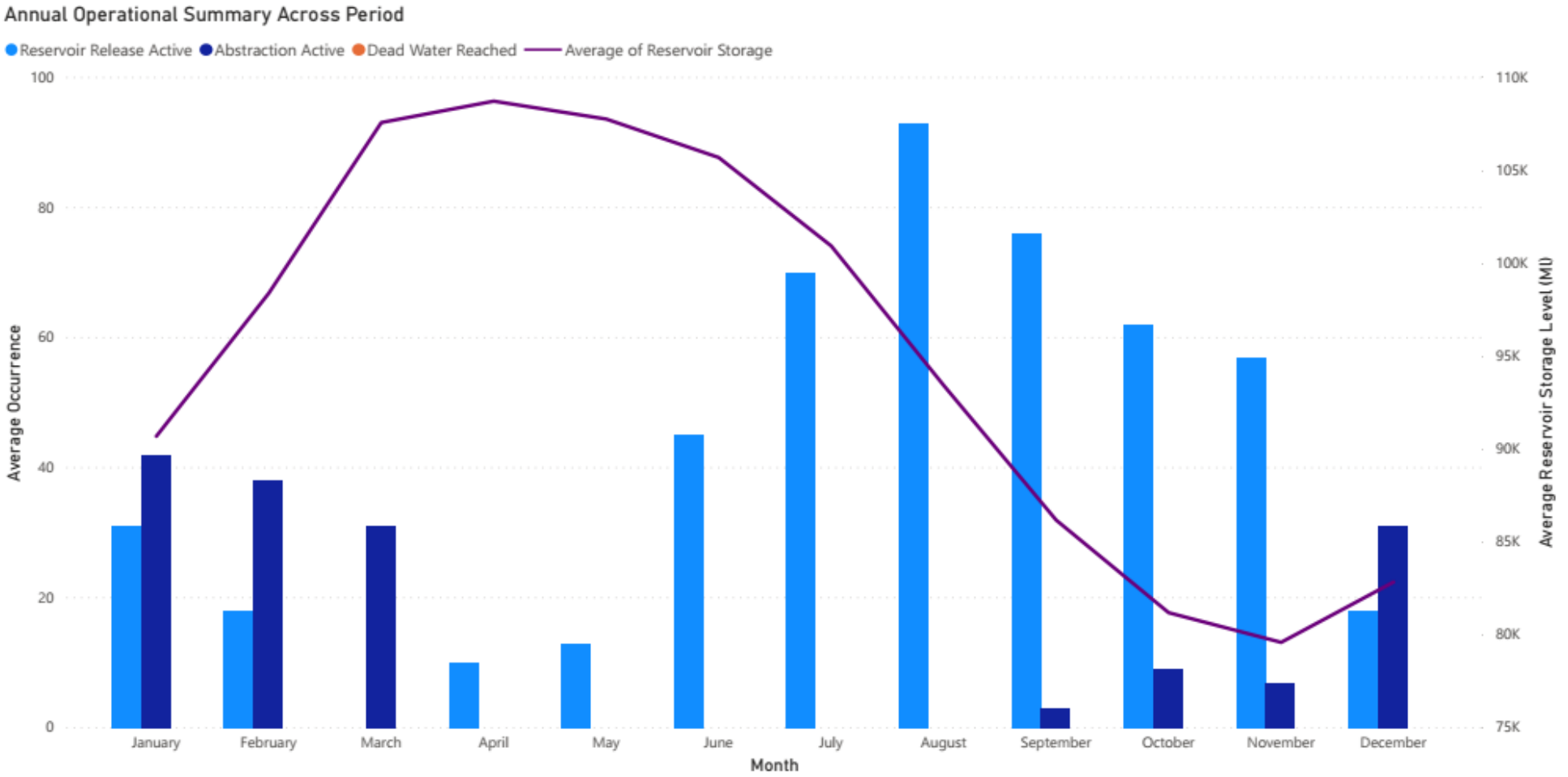
Option 5 - Annual (average) summary for extreme drought (1933-34)



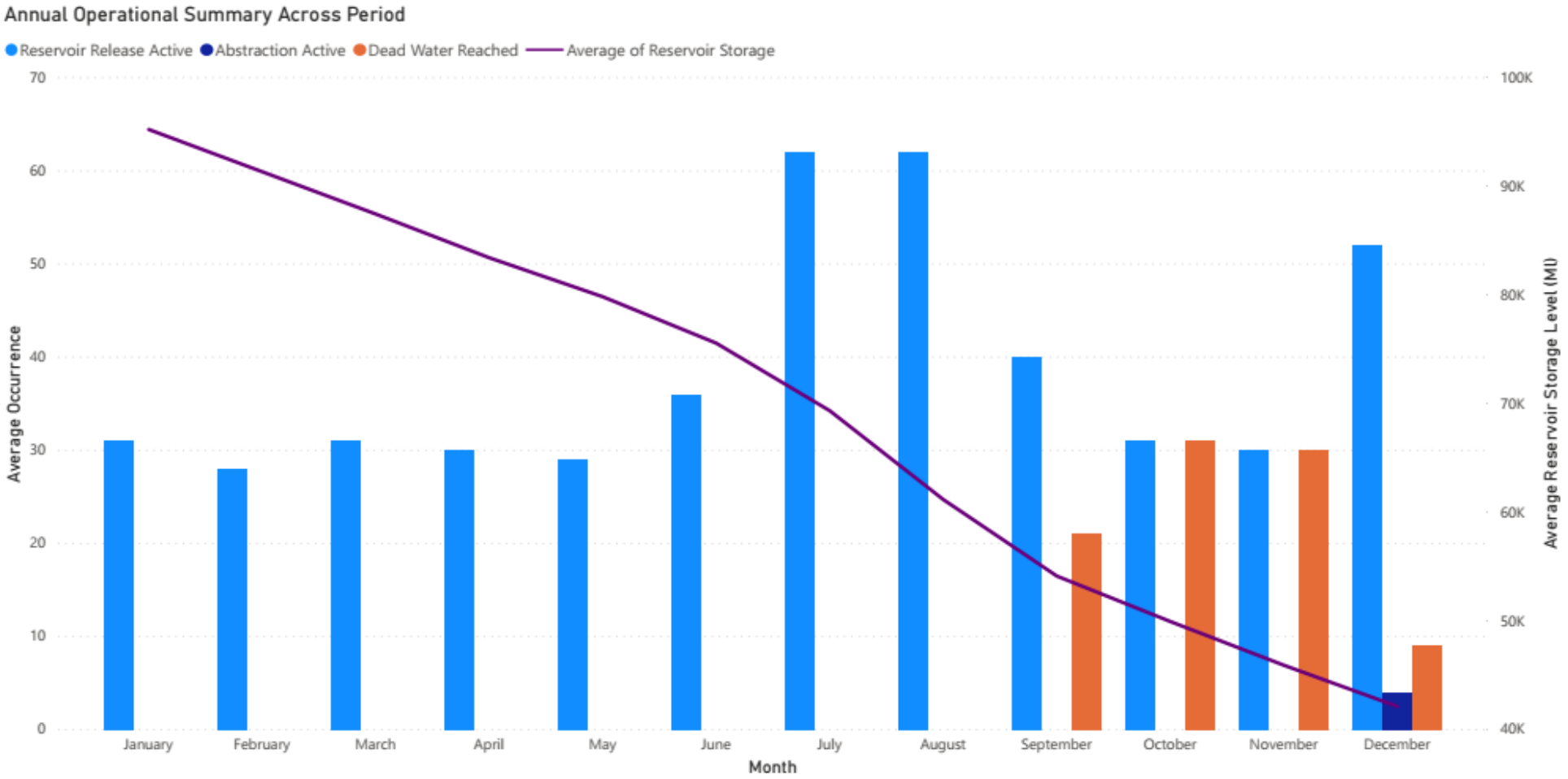
Option 6 - Annual (average) summary for all year's (1920-2010)



Option 6 - Annual (average) summary for typical non-drought (1986-88)



Option 6 - Annual (average) summary for typical drought (1996-98)



Option 6 - Annual (average) summary for extreme drought (1933-34)

Figure 6-1 Selected Environment Agency Water Quality Monitoring Locations

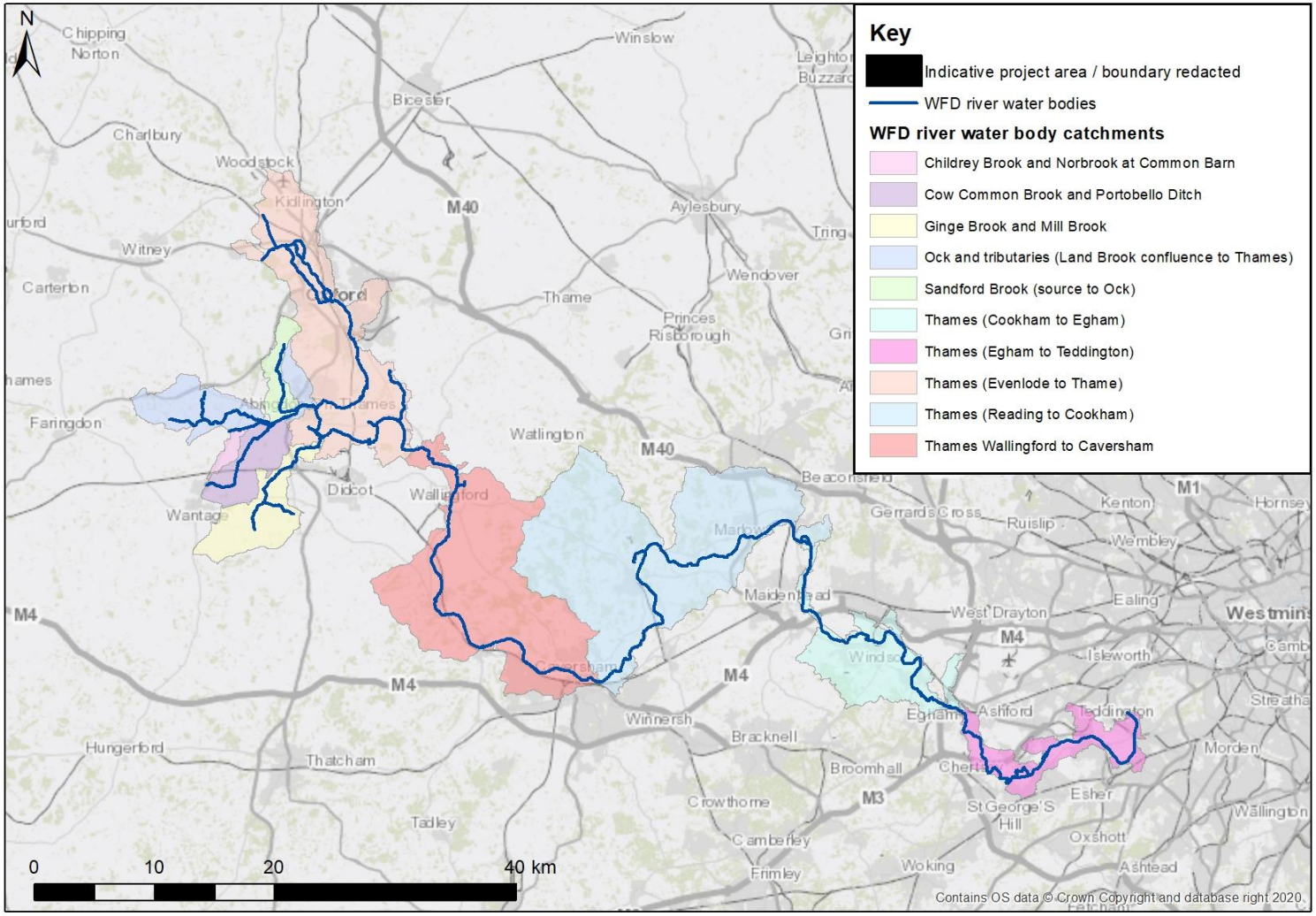

N
Key
Indicative project area / boundary redacted
WFD river water bodies
WFD river water body catchments
Childrey Brook and Norbrook at Common Barn
Cow Common Brook and Portobello Ditch
Ginge Brook and Mill Brook
Ock and tributaries (Land Brook confluence to Thames)
Sandford Brook (source to Ock)
Thames (Cookham to Egham)
Thames (Egham to Teddington)
Thames (Evenlode to Thame)
Thames (Reading to Cookham)
Thames Wallingford to Caversham
Chipping Norton
Winslow
Bicester
Charlbury
Woodstock
Kidlington
M40
Aylesbury
Witney
Carterton
Thame
Wendover
Princes Risborough
Faringdon
Watlington
Didcot
Wantage
Beaconsfield
Gerrards Cross
Ruislip
Kenton
Wembley
M1
Maidenhead
West Drayton
Ealing
M4
Isleworth
Egham
Ashford
Teddington
Bracknell
Winnersh
Hungerford
Thatcham
Broomhall
Esher
M3
Crowthorne
St George's Hill
Oxshott
Tadley
Camberley
Woking
Ashtead
Frimley
0
10
20
40 km
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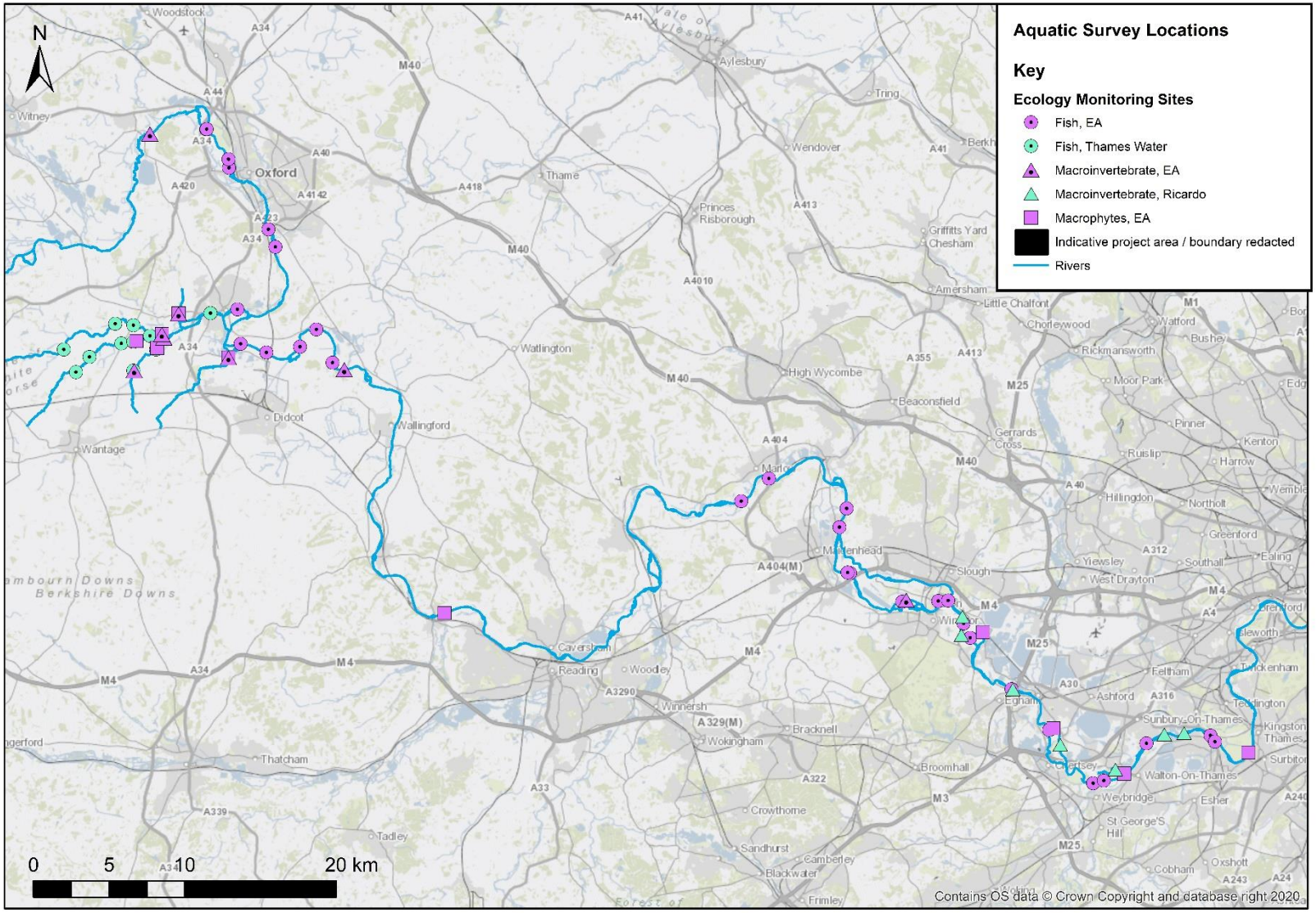
Figure 7.1 Selected Environment Agency and Historical Ecological Monitoring Site Locations


Aquatic Survey Locations
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
N
0 5 10 20 km
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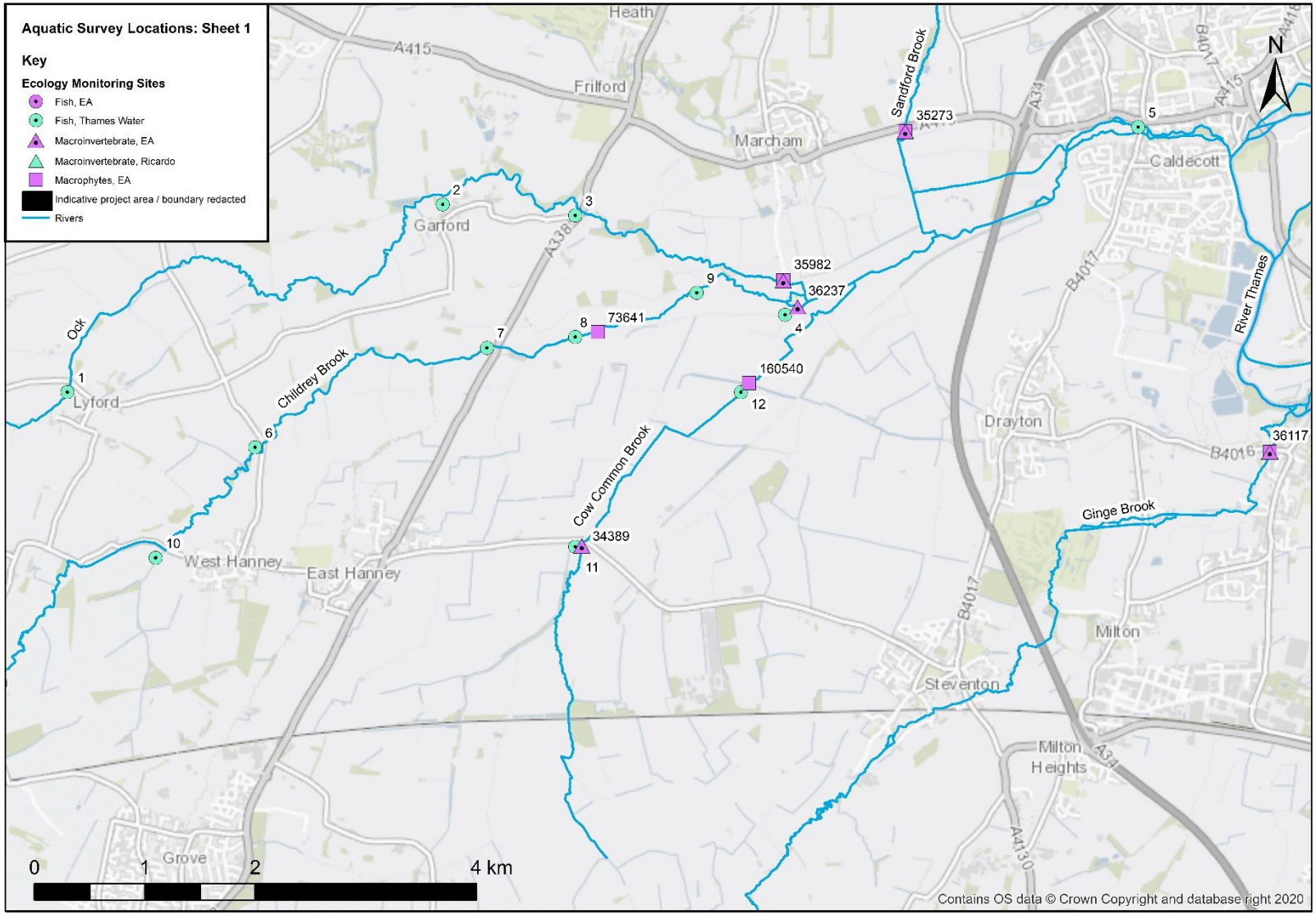
Aquatic Survey Locations: Sheet 1
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
Heath
A415
Frilford
Marcham
Garford
A338
Sandford Brook
35273
A34
5
Caldecott
B4017
A415
N
River Thames
35982
36237
9
4
73641
8
7
2
3
Ock
1
Lyford
Childrey Brook
6
160540
12
Drayton
36117
B4016
Ginge Brook
Cow Common Brook
34389
11
10
West Hanney
East Hanney
B4017
Milton
Steventon
Milton Heights
A34
A4130
Grove
0
1
2
4 km
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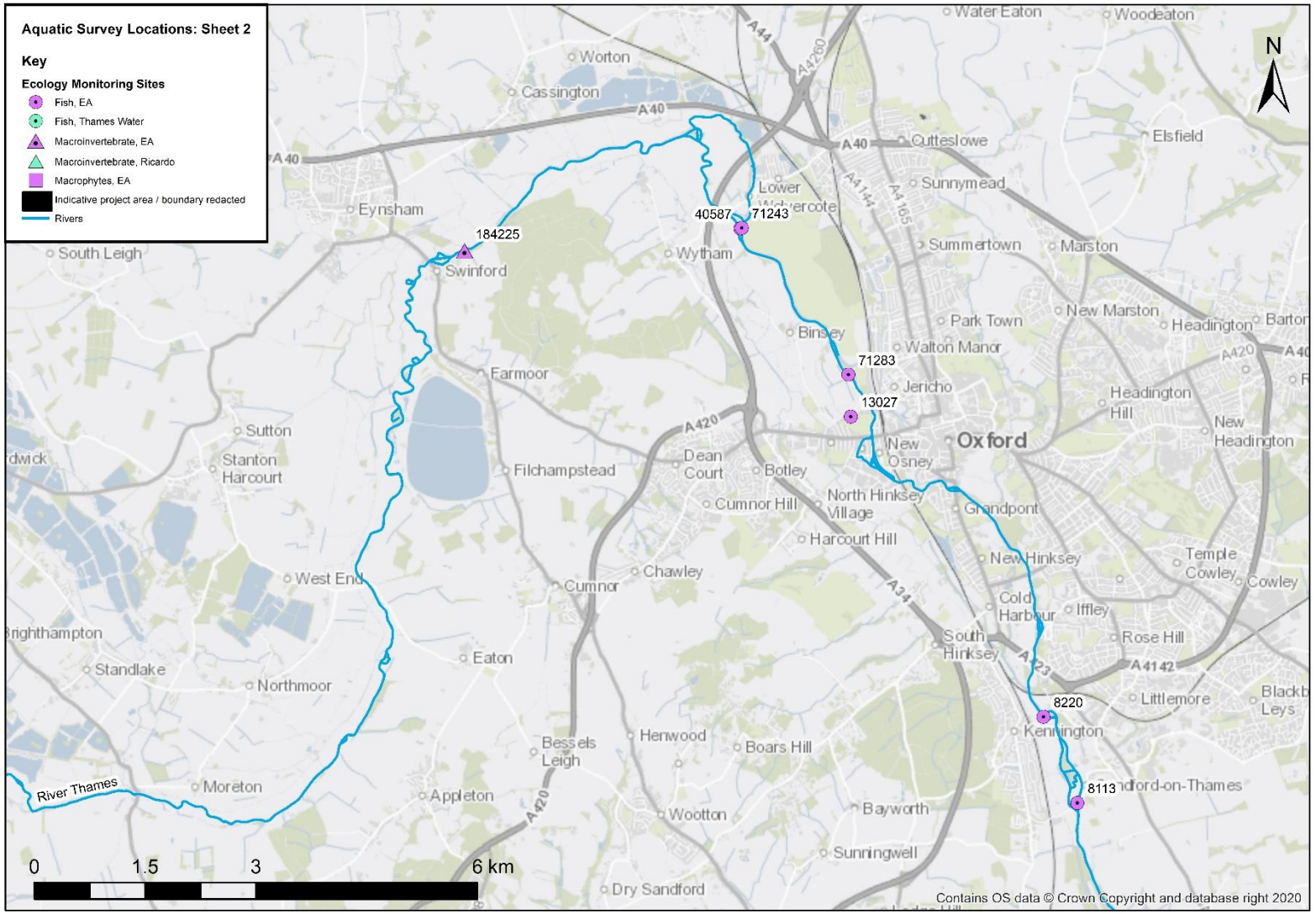
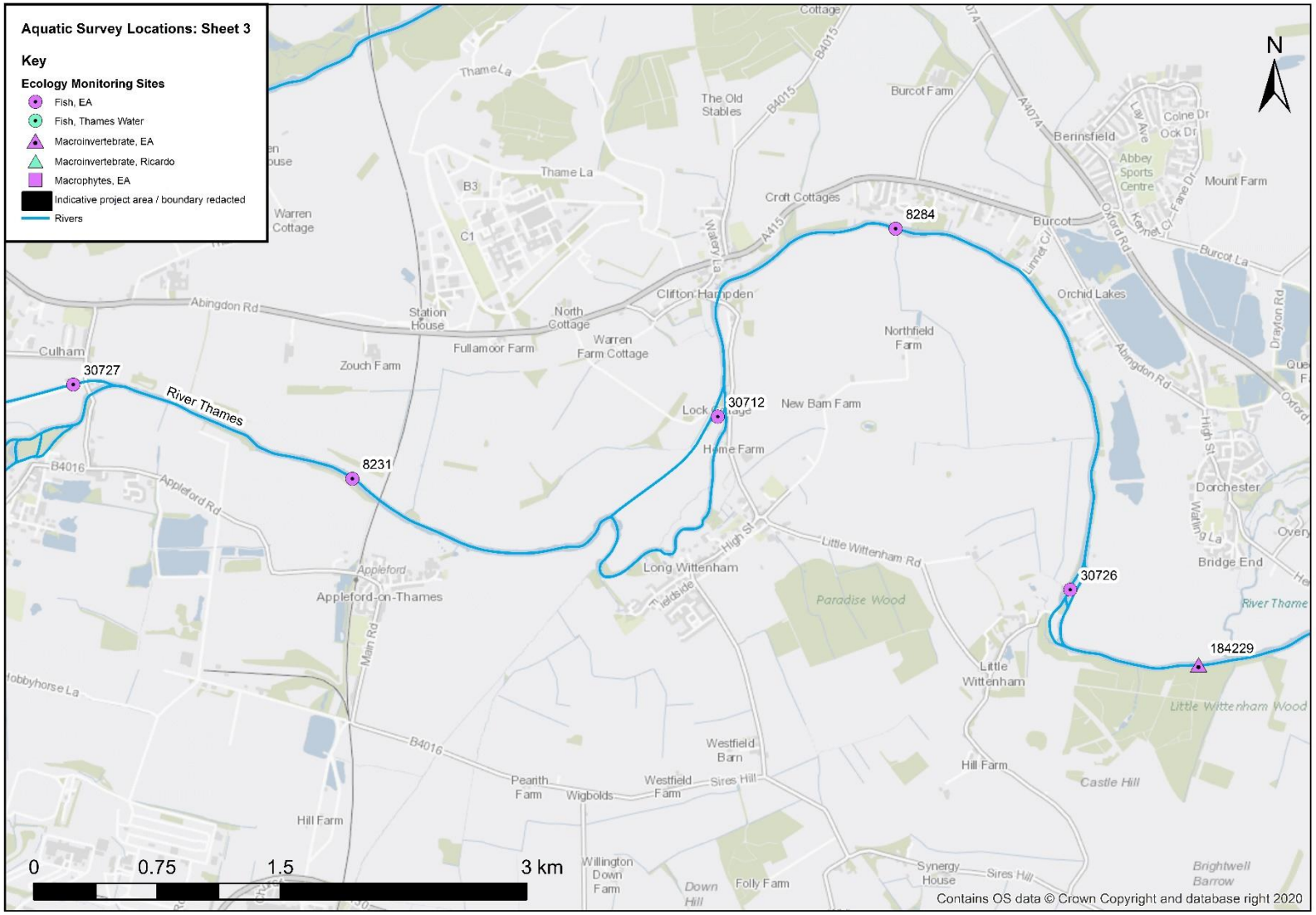

Aquatic Survey Locations: Sheet 2
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
N
184225
40587
71243
71283
13027
8220
8113
River Thames
Oxford
Water Eaton
Woodeaton
Worton
Cassington
Elsfield
Cutteslowe
Sunnymead
Lower Wolvercote
Eynsham
South Leigh
Swinford
Wytham
Summertown
Marston
Binsey
Park Town
New Marston
Headington
Walton Manor
Jericho
Farmoor
Sutton
Stanton Harcourt
Filchampstead
Dean Court
Botley
North Hinksey Village
Cumnor Hill
Harcourt Hill
Grandpont
New Osney
Headington Hill
New Headington
New Hinksey
Temple Cowley
Cowley
Iffley
Cold Harbour
South Hinksey
Rose Hill
Littlemore
Kennington
West End
Chawley
Cumnor
Eaton
Standlake
Northmoor
Bessels Leigh
Henwood
Boars Hill
Moreton
Appleton
Wootton
Bayworth
Sunningwell
Dry Sandford
0
1.5
3
6 km
Contains OS data © Crown Copyright and database right 2020


Aquatic Survey Locations: Sheet 3
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
N
30727
River Thames
8231
30712
8284
30726
184229
Abingdon Rd
Culham
Zouch Farm
Fullamoor Farm
Station House
North Cottage
Warren Farm Cottage
Clifton Hampden
Lock
New Barn Farm
Home Farm
Northfield Farm
Burcot Farm
Berinsfield
Abbey Sports Centre
Mount Farm
Croft Cottages
Burcot
Orchid Lakes
Burcot La
Dorchester
Bridge End
Little Wittenham Rd
Long Wittenham
Paradise Wood
Little Wittenham
Little Wittenham Wood
Castle Hill
Hill Farm
Westfield Barn
Westfield Farm
Pearith Farm
Wigbolds
Sires Hill
Willington Down Farm
Down Hill
Folly Farm
Synergy House
Brightwell Barrow
Appleford
Appleford-on-Thames
Appleford Rd
Main Rd
B4016
B4015
A4074
A415
B3
C1
Thame La
Warren Cottage
The Old Stables
Hobbyhorse La
0
0.75
1.5
3 km
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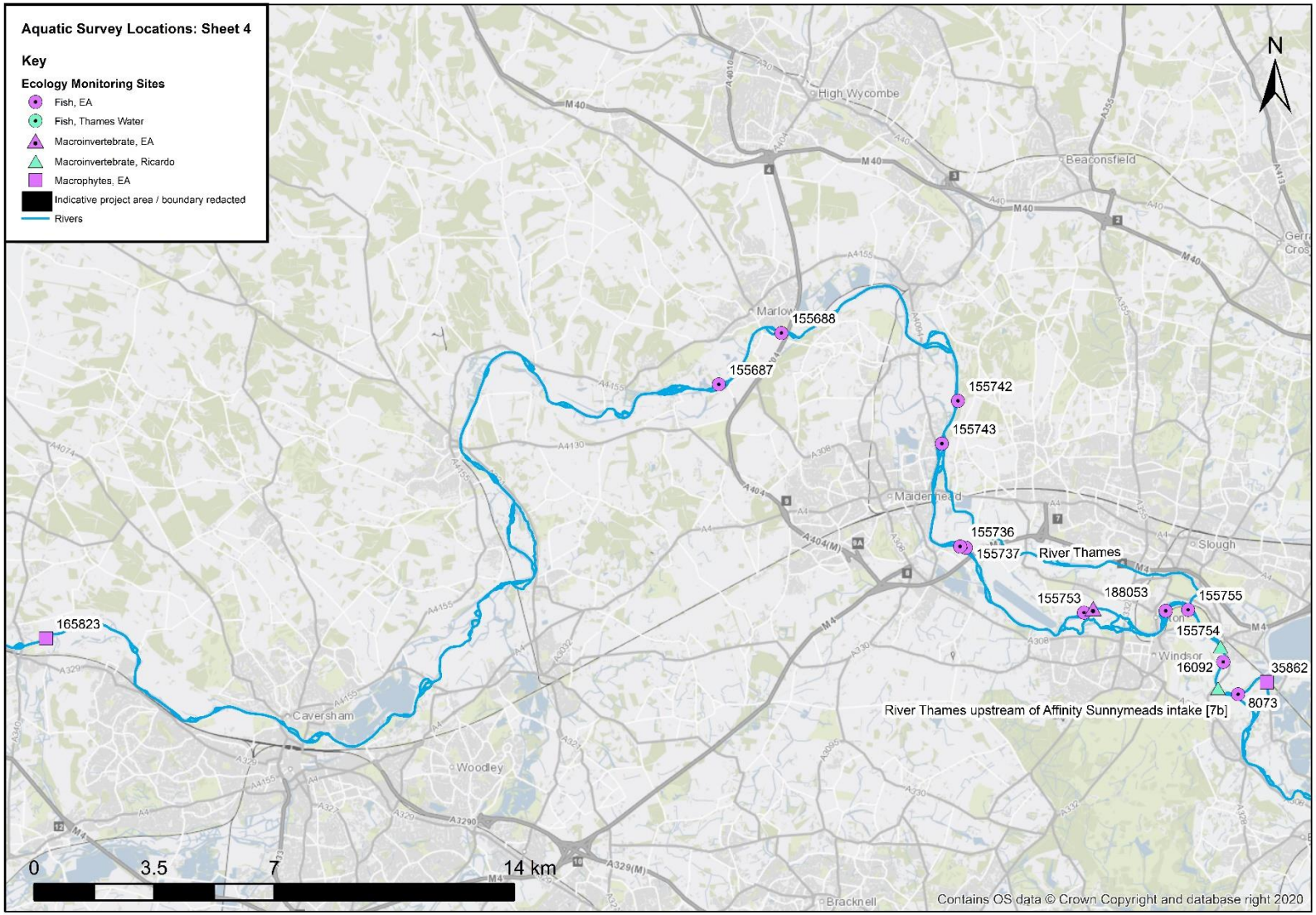
Aquatic Survey Locations: Sheet 4
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
N
155688
155687
155742
155743
155736
155737
River Thames
155753
188053
155755
155754
16092
35862
8073
River Thames upstream of Affinity Sunnymeads intake [7b]
165823
High Wycombe
Beaconsfield
Marlow
Maidenhead
Slough
Windsor
Eton
Caversham
Woodley
Bracknell
0
3.5
7
14 km
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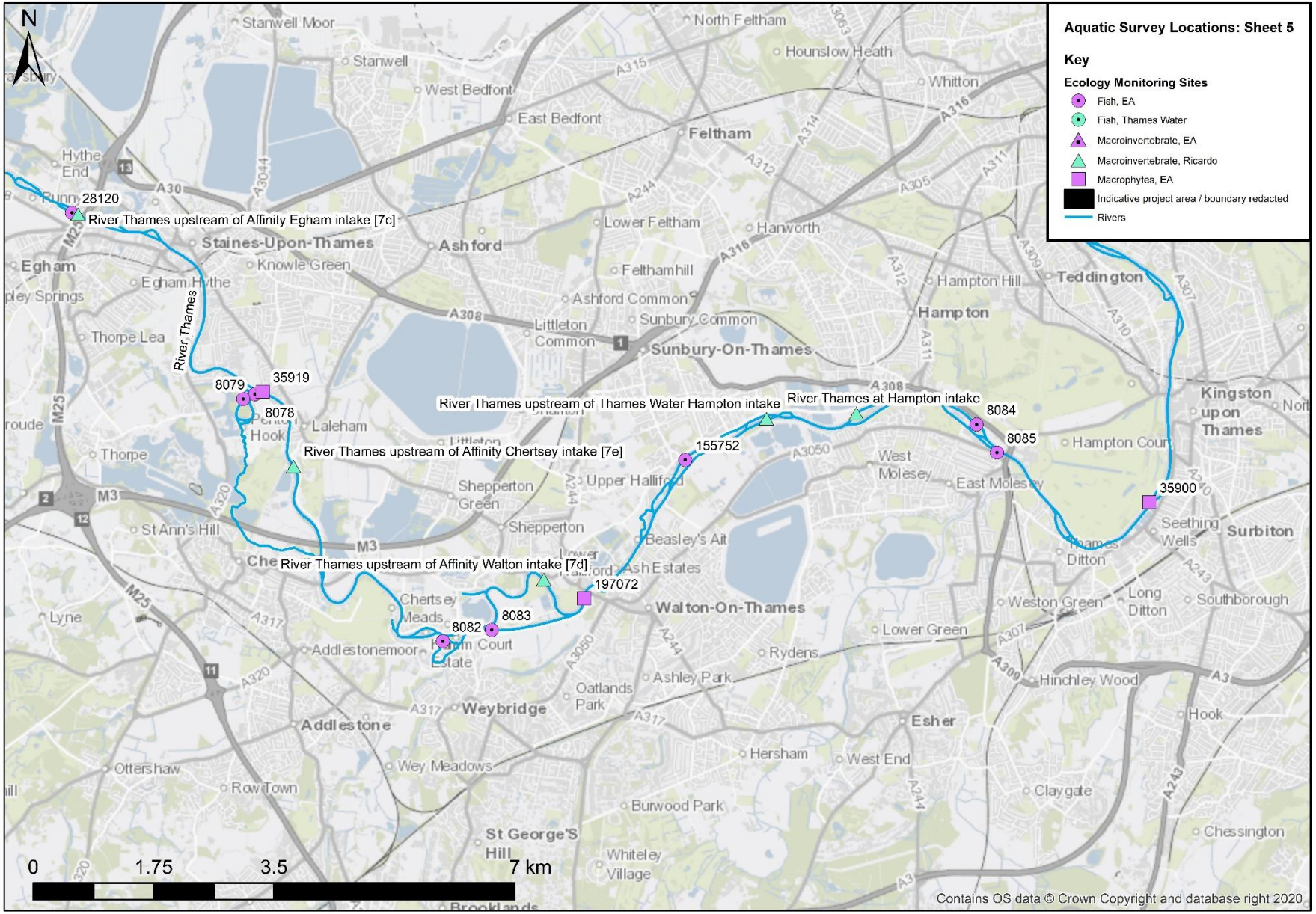
Aquatic Survey Locations: Sheet 5
Key
Ecology Monitoring Sites
Fish, EA
Fish, Thames Water
Macroinvertebrate, EA
Macroinvertebrate, Ricardo
Macrophytes, EA
Indicative project area / boundary redacted
Rivers
N
28120
River Thames upstream of Affinity Egham intake [7c]
8079
35919
8078
River Thames upstream of Affinity Chertsey intake [7e]
River Thames upstream of Thames Water Hampton intake
River Thames at Hampton intake
8084
8085
155752
35900
River Thames upstream of Affinity Walton intake [7d]
197072
8083
8082
0
1.75
3.5
7 km
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Figure 9.1 Draft Design of the SESRO Reservoir Site and proposed Activities in the Medium-High Scenario


KEY
Proposed built facilities
Roads (proposed and existing)
Parking, permanent and overflow
Footpaths/tracks/bridleways/ cyclepaths (proposed and existing)
Open water
Wet unimproved neutral grassland
Unimproved neutral grassland
Scrub and grassland
Woodland (broadleaved & wet) and hedges
Area allocated for land based formal sports
Corridor for future canal
Beach
Existing settlements
DRAYTON
EAST HANNEY
STEVENTON
Great Western Main Line
River Ock
A34
JACOBS
LAND USE CONSULTANTS
UPPER THAMES MAJOR RESOURCE DEVELOPMENT
MEDIUM HIGH SCENARIO PLAN
TLIC-E2-00006-EX-REV A
STAGE 2 PREFERRED SCHEME AND DESIGN OPTIONS REPORT
JANUARY 2007
FIGURE 7.19

Figure 11.1 Steps in the Natural Capital Assessment


STEP 1
Natural Capital baseline
STEP 2
Change in Natural Capital assets
STEP 3
Identify ecosystem services
STEP 4
Qualitative assessment
STEP 5
Quantitative assessment and monetisation
STEP 6
Calculate Natural Captial Metrics

Figure 11.2 Natural Capital Assets: Baseline

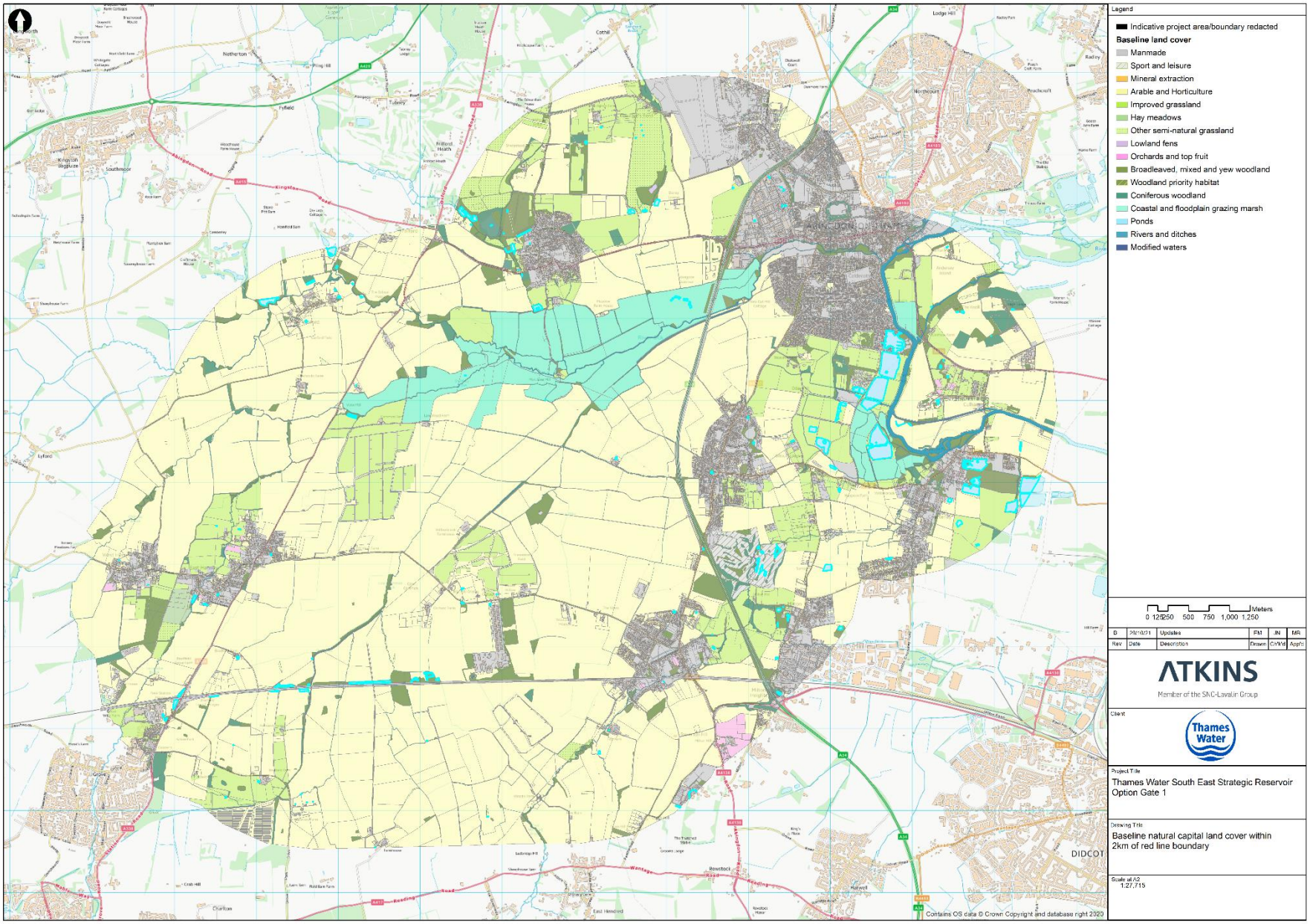
Legend
Indicative project area/boundary redacted
Baseline land cover
Manmade
Sport and leisure
Mineral extraction
Arable and Horticulture
Improved grassland
Hay meadows
Other semi-natural grassland
Lowland fens
Orchards and top fruit
Broadleaved, mixed and yew woodland
Woodland priority habitat
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
Meters
0 125 250 500 750 1,000 1,250
Rev Date Description Drawn Ch'kd Appr'd
D 29/10/21 Updates FM JN MR
ATKINS
Member of the SNC-Lavalin Group
Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Baseline natural capital land cover within 2km of red line boundary
Scale at A2
1:27,715
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Figure 11.3 Natural Capital Assets: Baseline plus 2 km Buffer

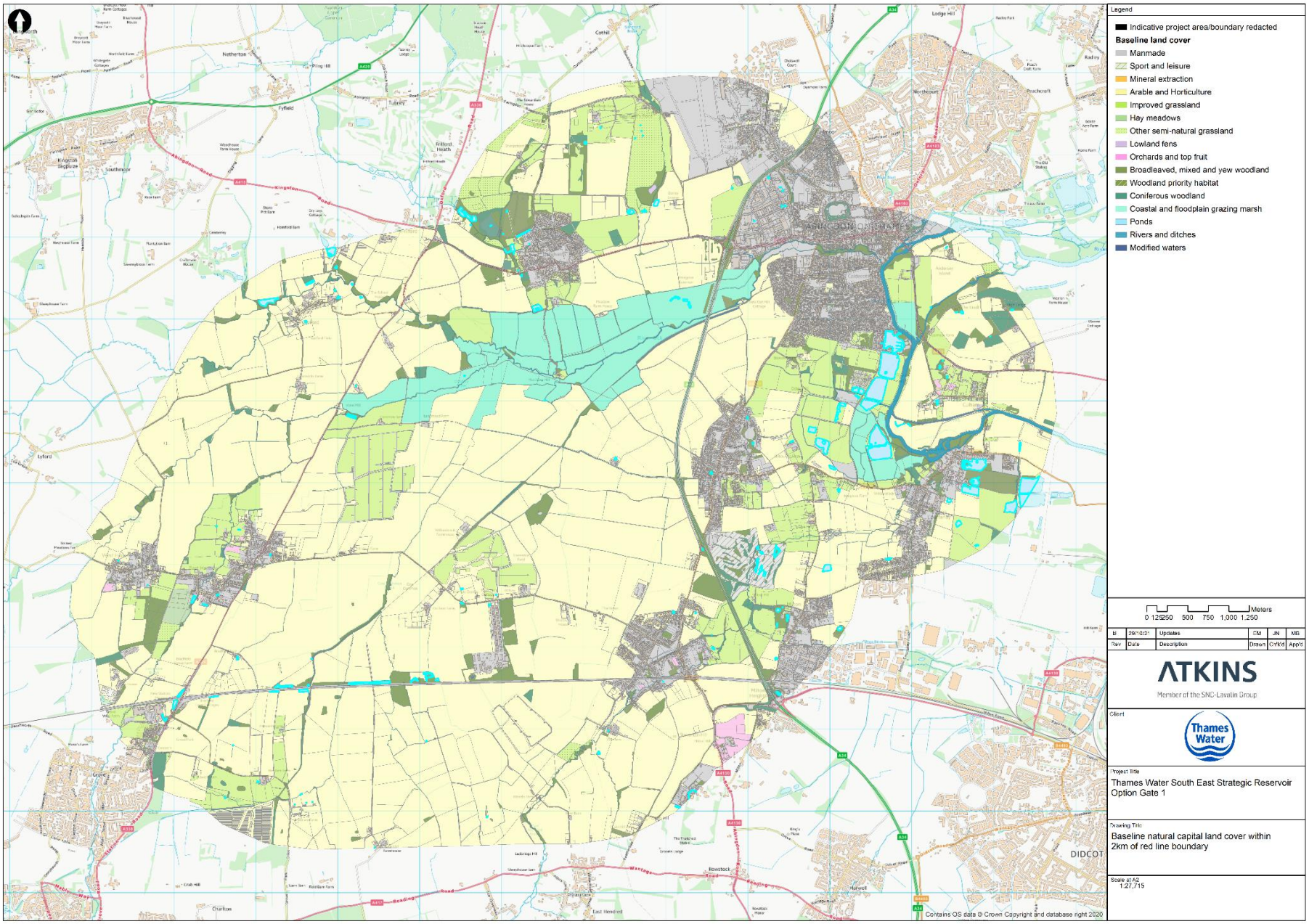
Legend
Indicative project area/boundary redacted
Baseline land cover
Manmade
Sport and leisure
Mineral extraction
Arable and Horticulture
Improved grassland
Hay meadows
Other semi-natural grassland
Lowland fens
Orchards and top fruit
Broadleaved, mixed and yew woodland
Woodland priority habitat
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
Meters
0 125 250 500 750 1,000 1,250
Rev Date Description Drawn Chkd Appd
B 29/10/21 Updates ZM JN MS
ATKINS
Member of the SNC-Lavalin Group
Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Baseline natural capital land cover within 2km of red line boundary
Scale at A2
1:27,715
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Figure 11.4 Natural Capital Assets: SESRO 150 Option

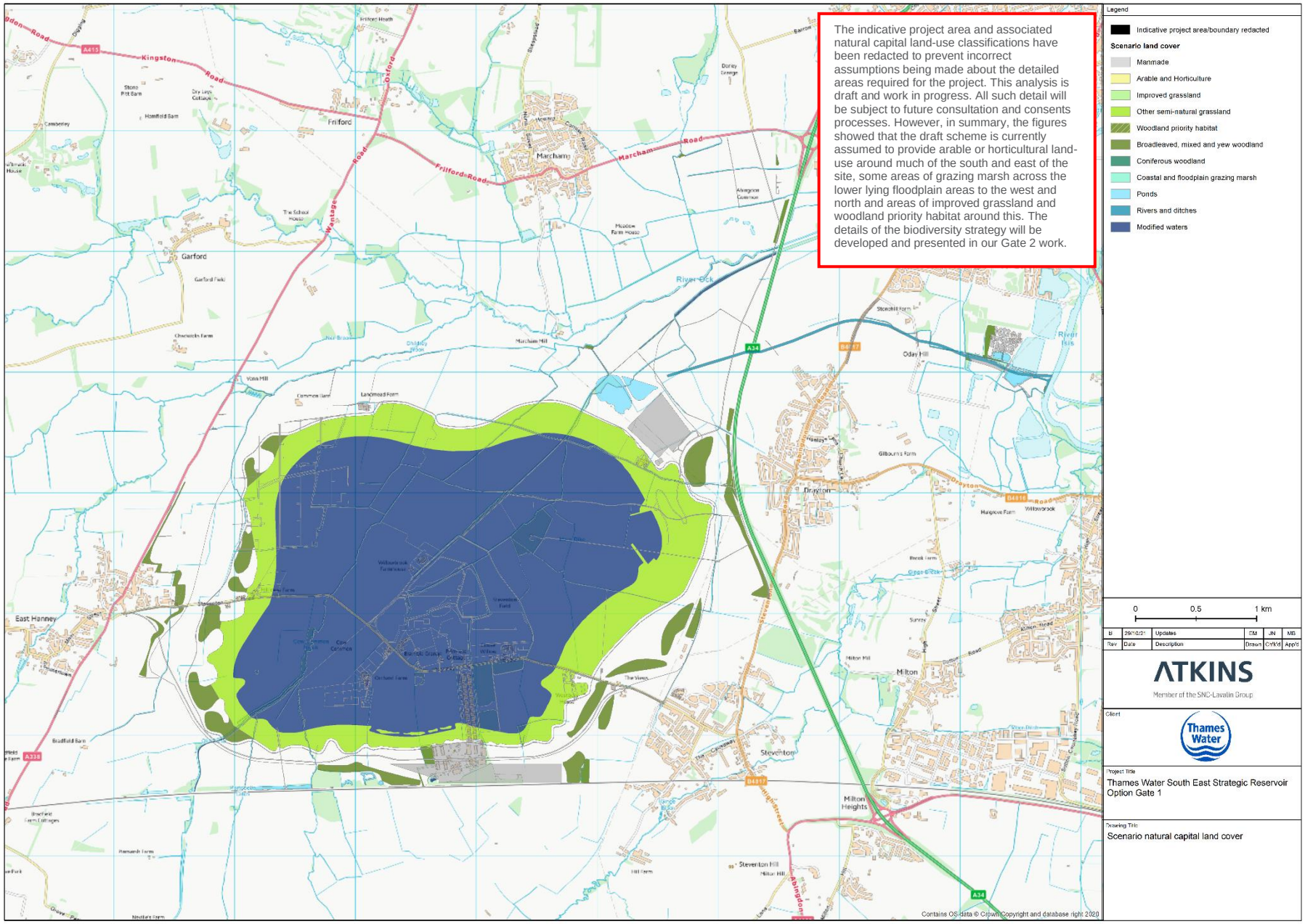
The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
Rev
Date
Description
Drawn
Chkd
Appd
B
29/10/21
Updates
ZM
JN
MS
ATKINS
Member of the SNC-Lavalin Group
Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Scenario natural capital land cover
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Figure 11.5 Natural Capital Assets: SESRO 125 Option

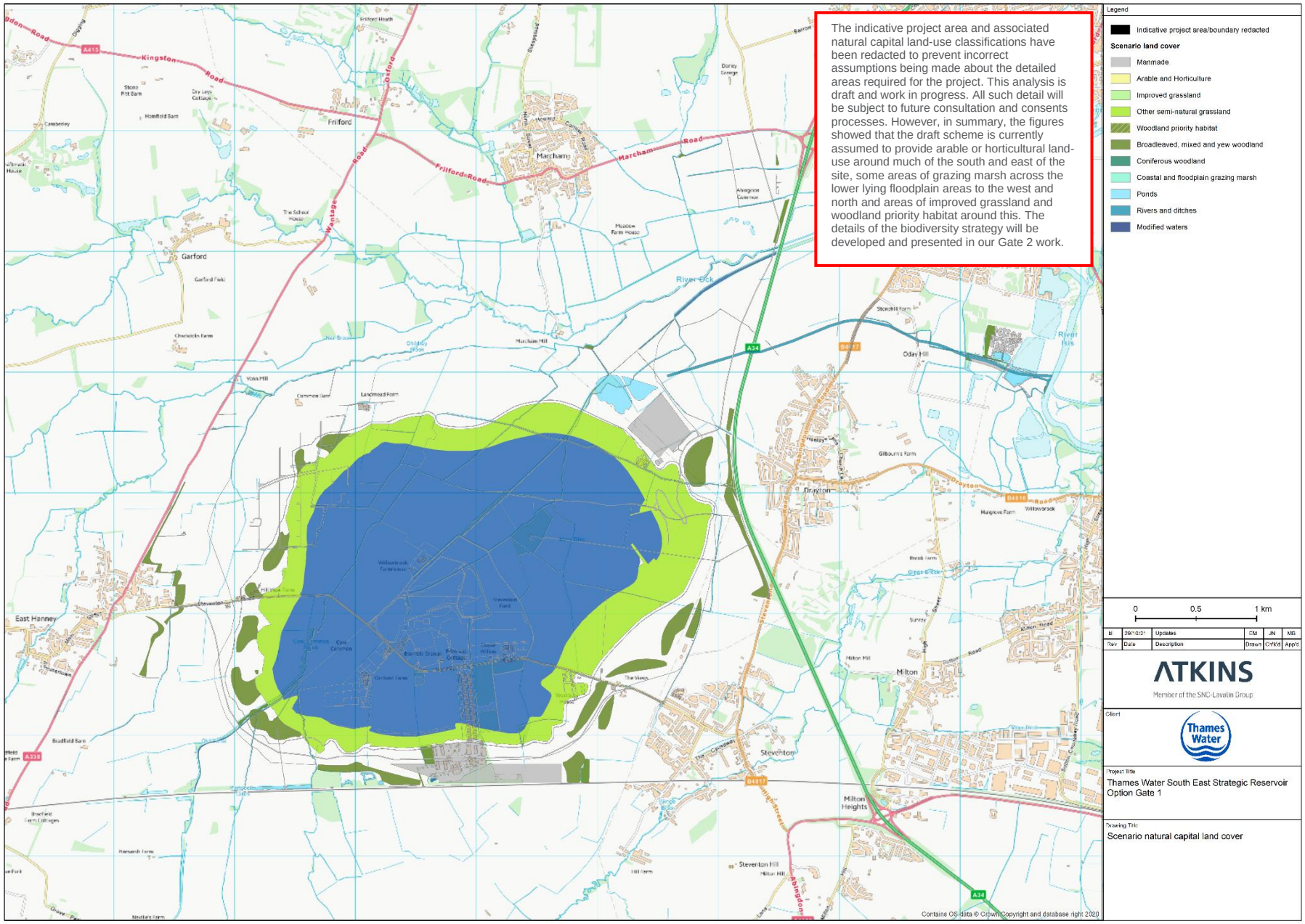
The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
Rev
Date
Description
Drawn
Chkd
Appd
29/10/21
Updates
ZM
JN
MS
ATKINS
Member of the SNC-Lavalin Group
Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Scenario natural capital land cover
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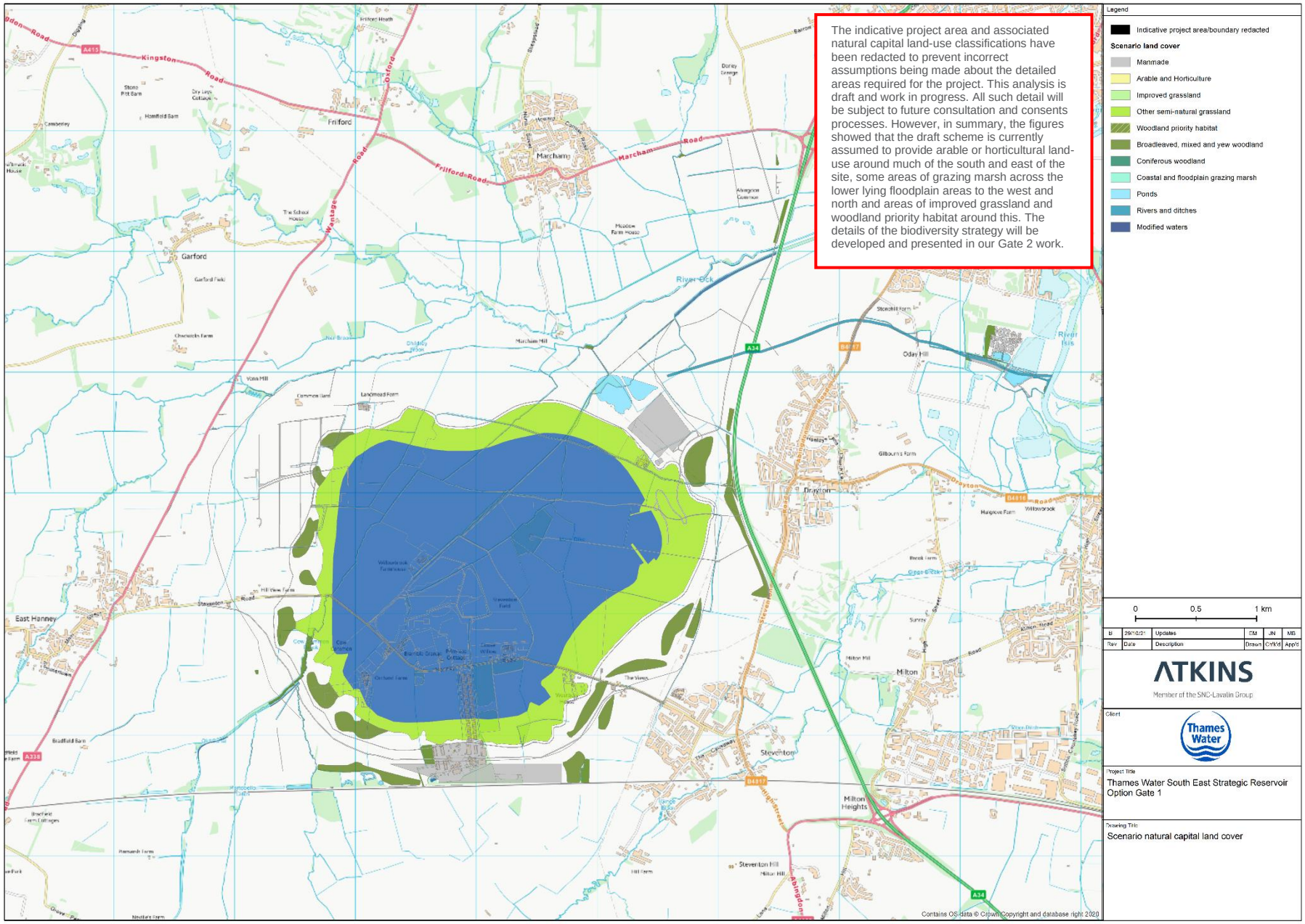
Figure 11.6 Natural Capital Assets: SESRO 100 Option


The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
Rev
Date
Description
Drawn
Chkd
Appd
29/10/21
Updates
ZM
JN
MB
ATKINS
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Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Scenario natural capital land cover
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Figure 11.7 Natural Capital Assets: SESRO 75 Option

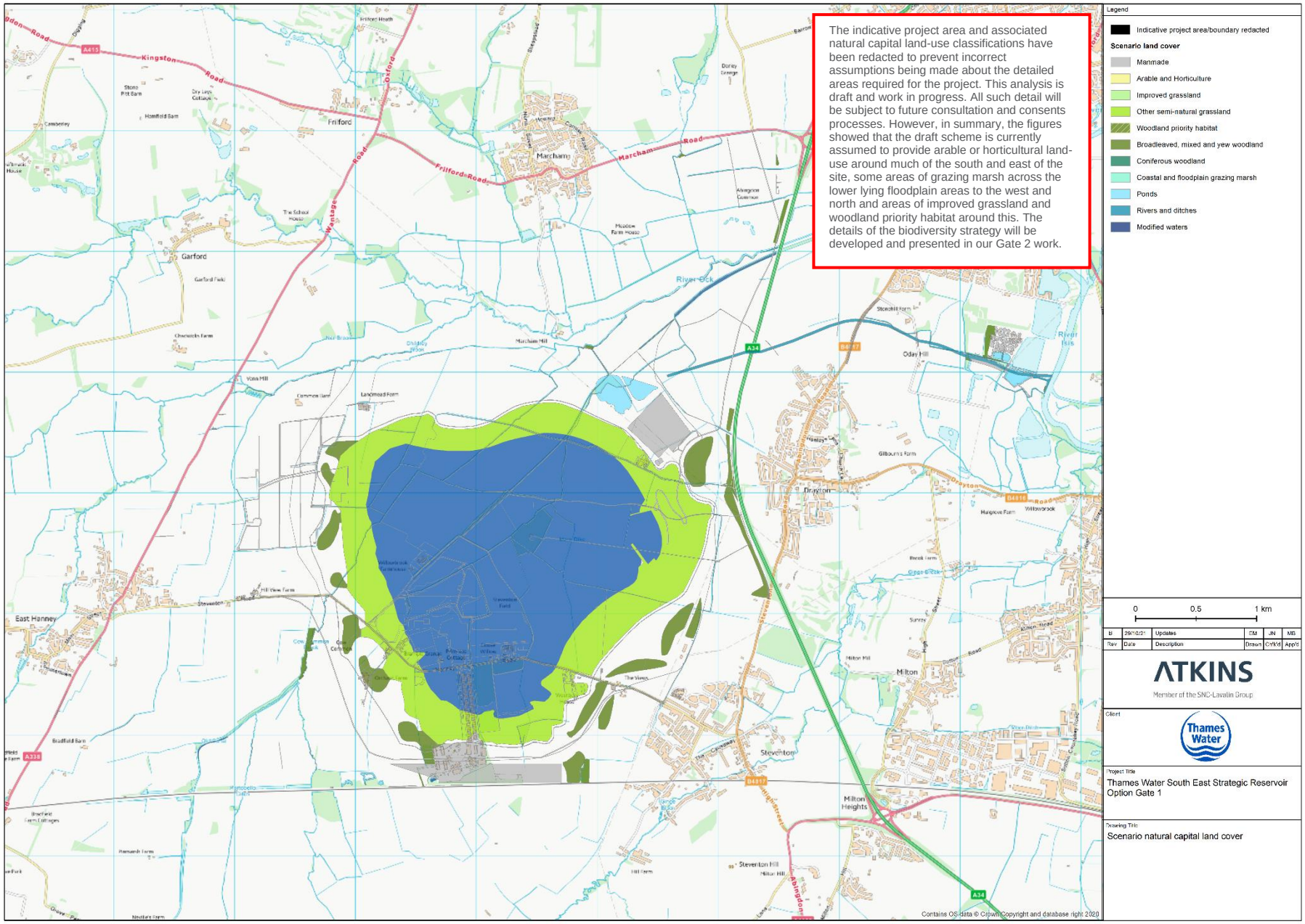
The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
Rev
Date
Description
Drawn
Chkd
Appd
29/10/21
Updates
ZM
JN
MS
ATKINS
Member of the SNC-Lavalin Group
Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Scenario natural capital land cover
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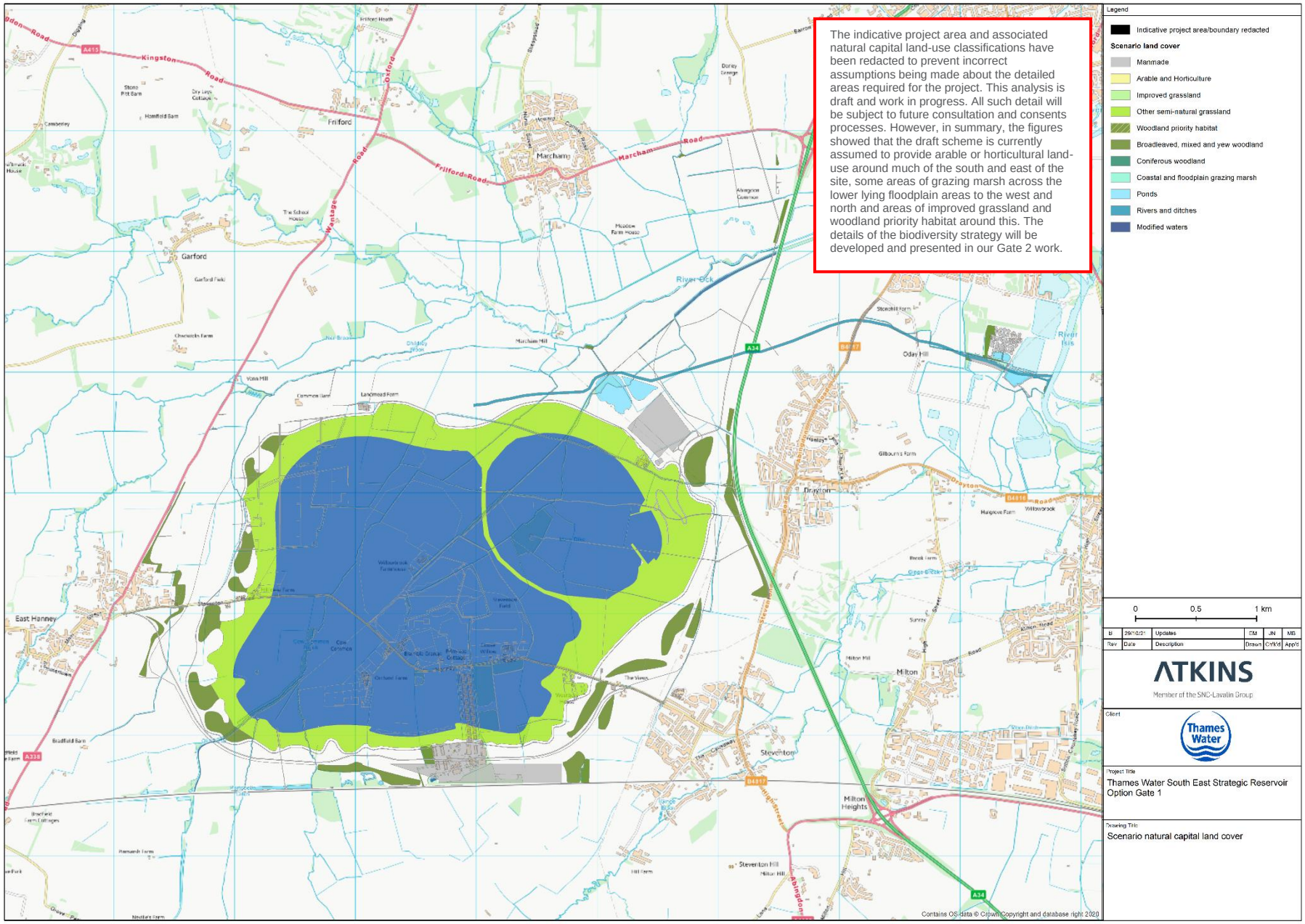
Figure 11.8 Natural Capital Assets: SESRO 30/100 Option


The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
Rev
Date
Description
Drawn
Chkd
Appd
B
29/10/21
Updates
ZM
JN
MS
ATKINS
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Client
Thames Water
Project Title
Thames Water South East Strategic Reservoir Option Gate 1
Drawing Title
Scenario natural capital land cover
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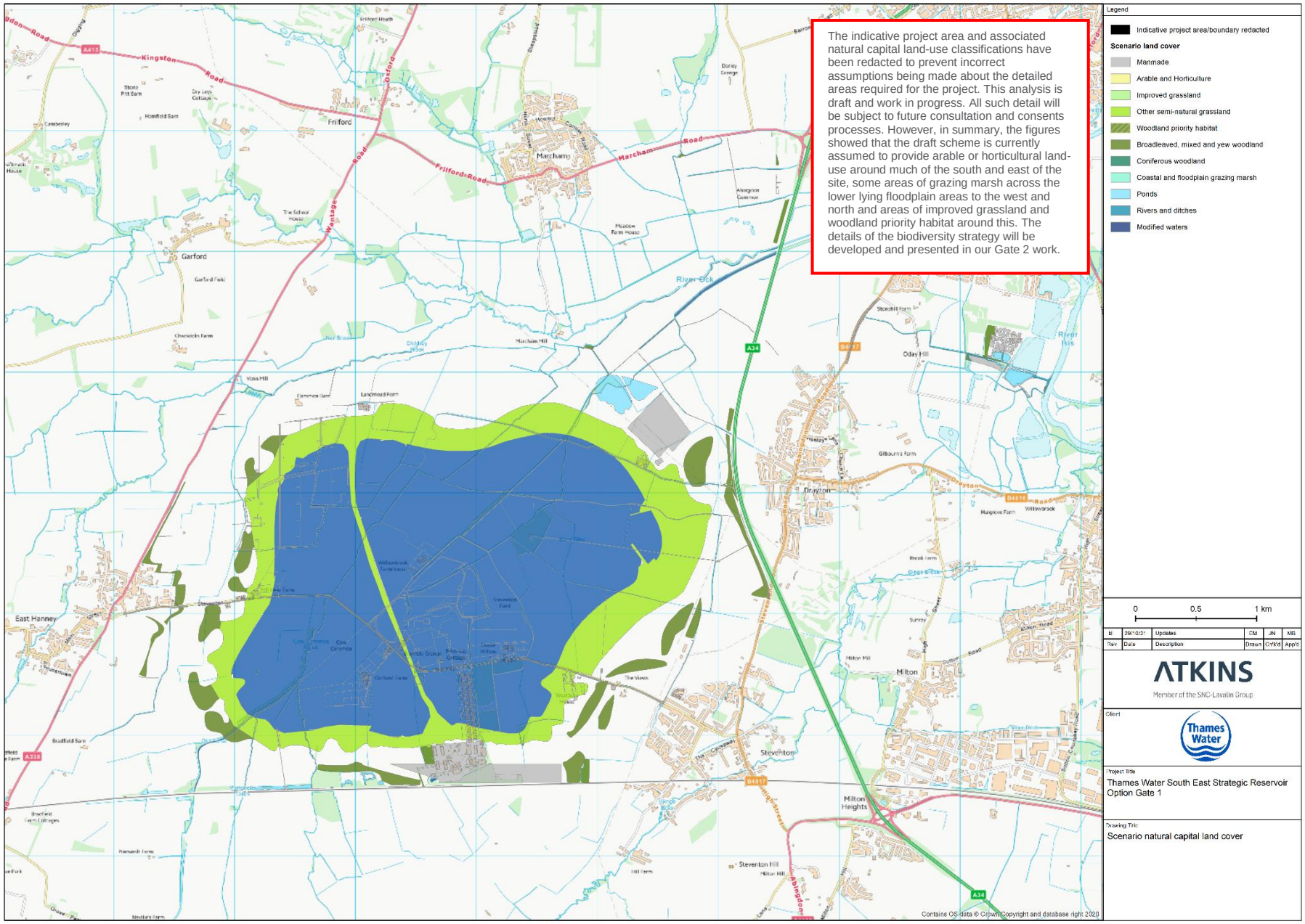
Figure 11.9 Natural Capital Assets: SESRO 80/42 Option


The indicative project area and associated natural capital land-use classifications have been redacted to prevent incorrect assumptions being made about the detailed areas required for the project. This analysis is draft and work in progress. All such detail will be subject to future consultation and consents processes. However, in summary, the figures showed that the draft scheme is currently assumed to provide arable or horticultural land-use around much of the south and east of the site, some areas of grazing marsh across the lower lying floodplain areas to the west and north and areas of improved grassland and woodland priority habitat around this. The details of the biodiversity strategy will be developed and presented in our Gate 2 work.
Legend
Indicative project area/boundary redacted
Scenario land cover
Manmade
Arable and Horticulture
Improved grassland
Other semi-natural grassland
Woodland priority habitat
Broadleaved, mixed and yew woodland
Coniferous woodland
Coastal and floodplain grazing marsh
Ponds
Rivers and ditches
Modified waters
0
0.5
1 km
B 29/10/21 Updates ZM JN MS
Rev Date Description Drawn Chkd Appd
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Drawing Title
Scenario natural capital land cover
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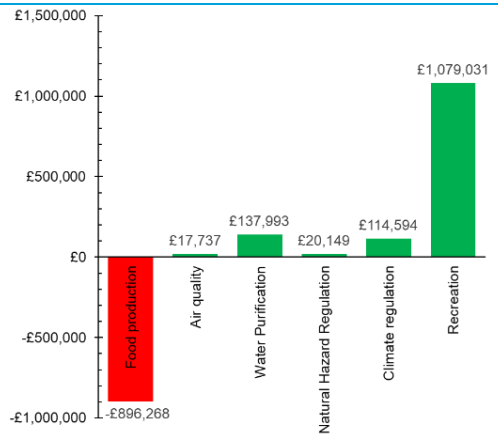
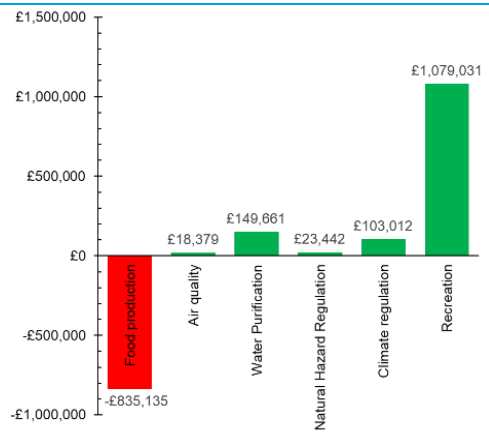
Figure 11.10 Annual Change in Ecosystem Services for each Option

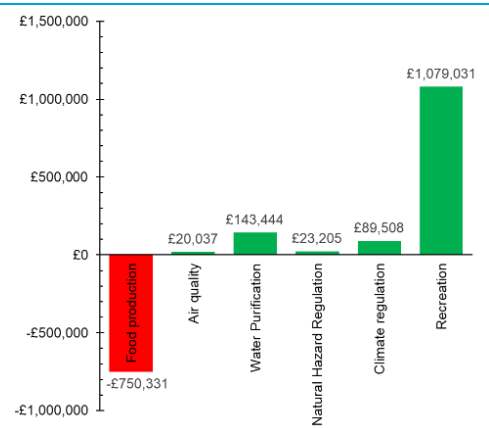
150Mm^3



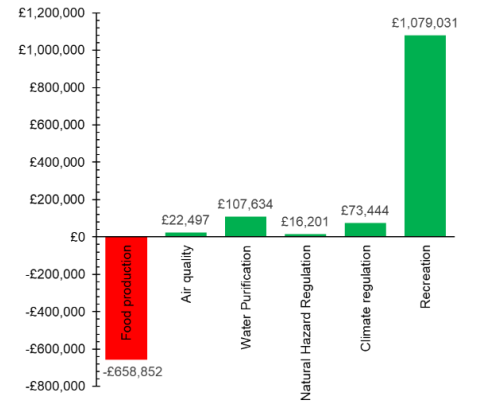
125Mm^3



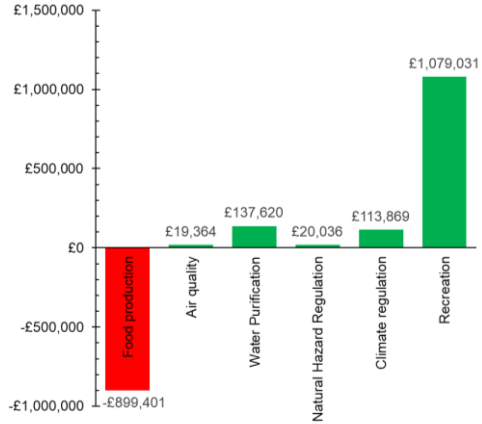
100Mm^3



75Mm^3



30/100Mm^3



80/42Mm^3

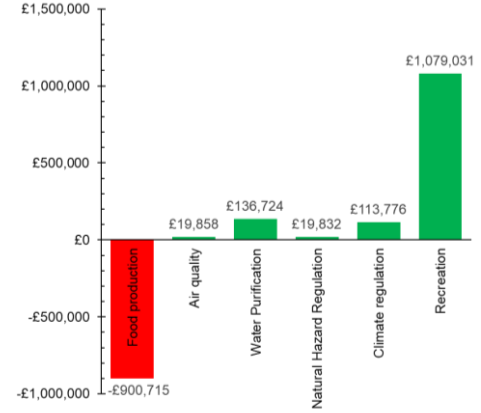


Figure 11.11 The Six Capitals Framework

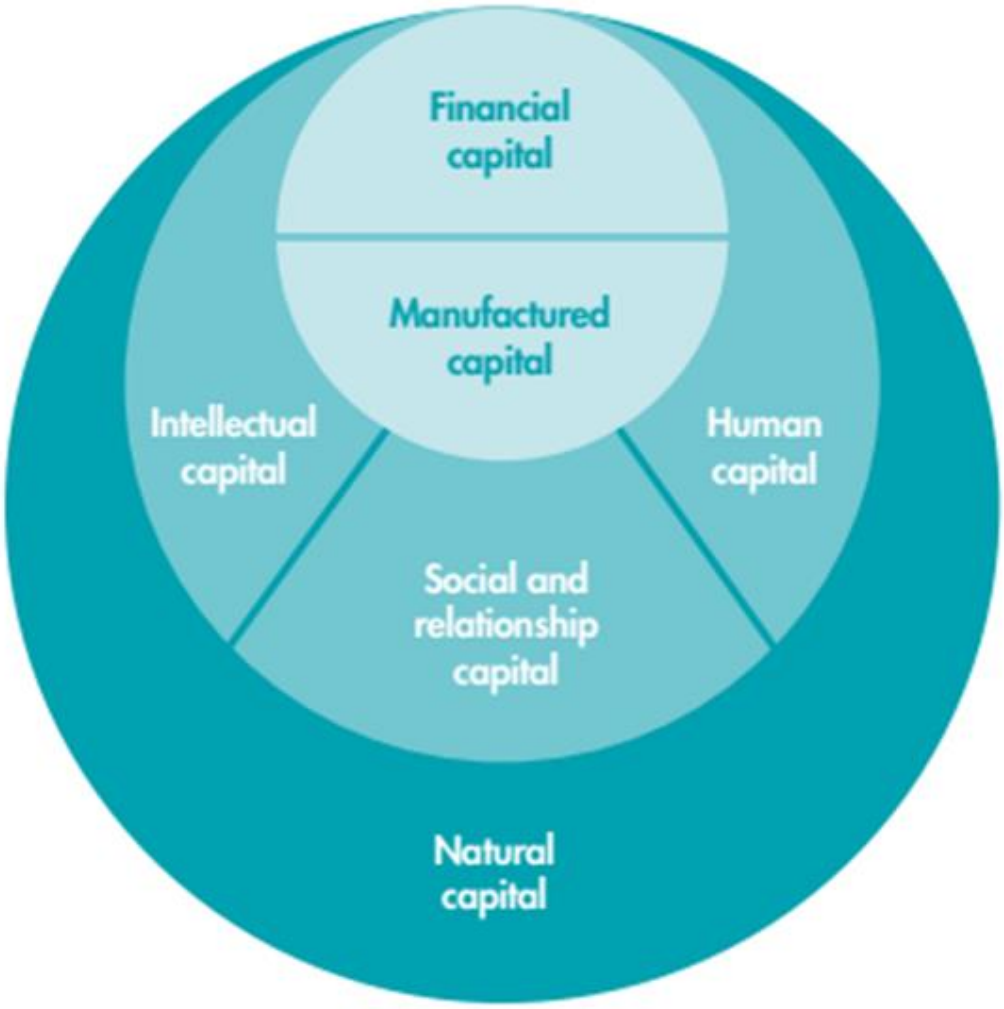
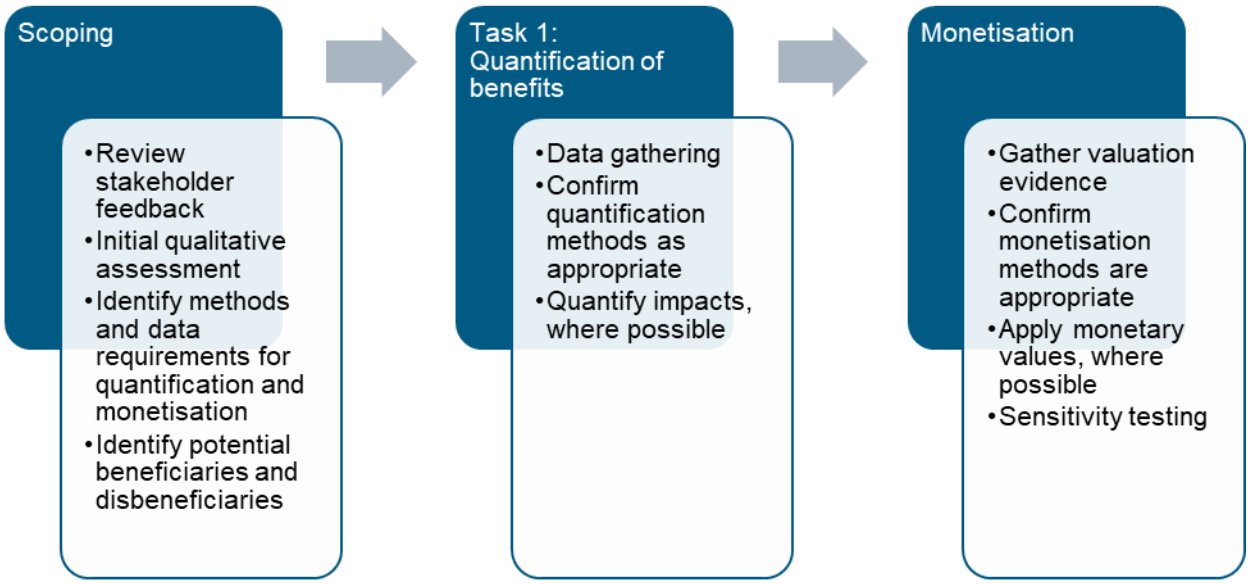

Financial capital
Manufactured capital
Intellectual capital
Human capital
Social and relationship capital
Natural capital

Figure 11.12 Approach to Scoping and Task 2


Scoping
•Review stakeholder feedback
•Initial qualitative assessment
•Identify methods and data requirements for quantification and monetisation
•Identify potential beneficiaries and disbeneficiaries
Task 1: Quantification of benefits
•Data gathering
•Confirm quantification methods as appropriate
•Quantify impacts, where possible
Monetisation
•Gather valuation evidence
•Confirm monetisation methods are appropriate
•Apply monetary values, where possible
•Sensitivity testing

Atkins Limited
Woodcote Grove
Ashley Road
Epsom
Surrey
KT18 5BW