

TECHNICAL PAPER

04

Hydrology and flooding impact assessment

Appendix B Design case flood impact maps

Appendix B3 Duration change maps

NARRABRI TO NORTH STAR—PHASE 2 ENVIRONMENTAL IMPACT STATEMENT



Appendix B – Design case flood impact maps

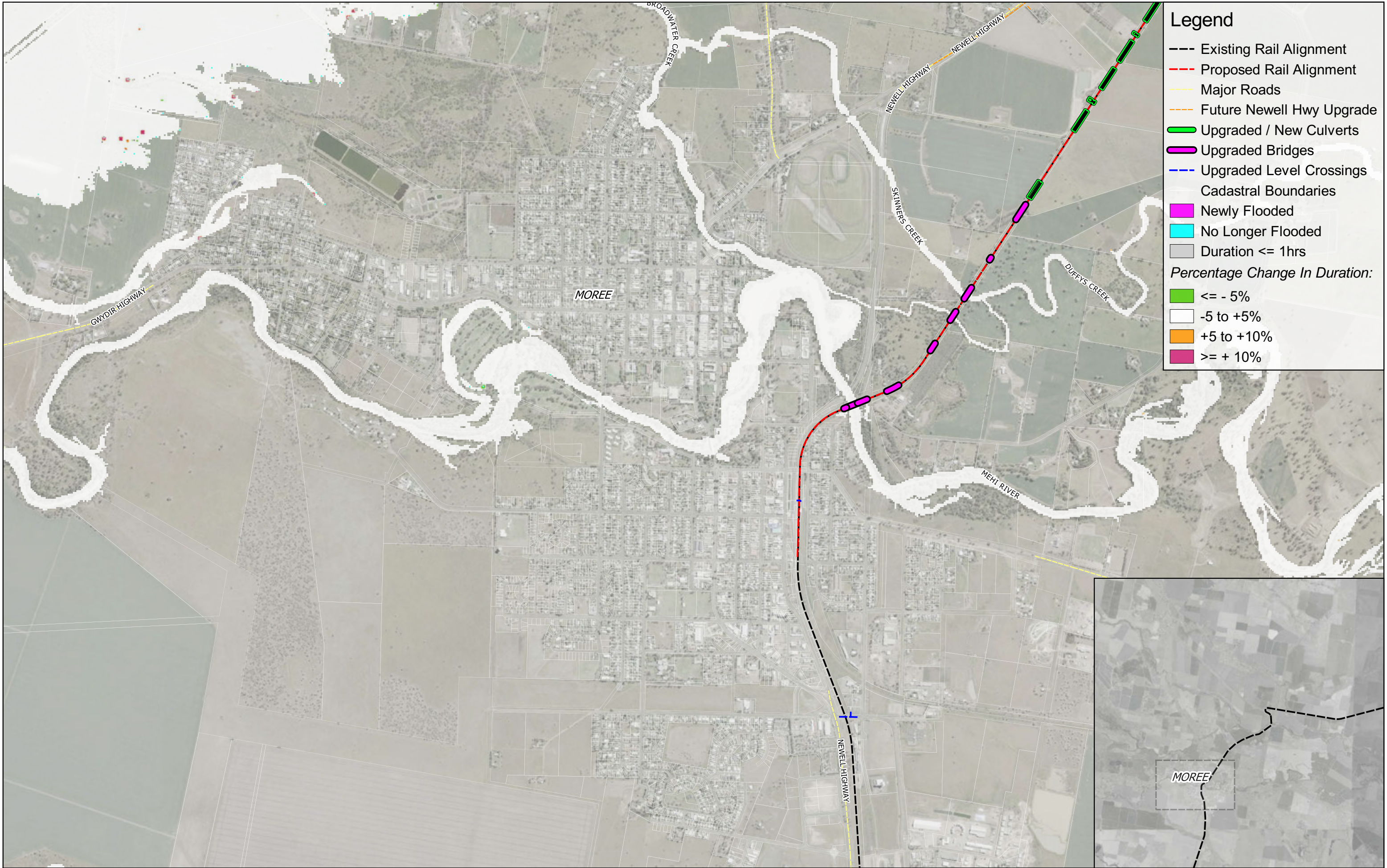
Map list

MAP SET ID	MAP CONTENTS
DES_AFF_020	Flood Level Change (Afflux) – Design Case, 20% AEP Event
DES_AFF_010	Flood Level Change (Afflux) – Design Case, 10% AEP Event
DES_AFF_005	Flood Level Change (Afflux) – Design Case, 5% AEP Event
DES_AFF_002	Flood Level Change (Afflux) – Design Case, 2% AEP Event
DES_AFF_001	Flood Level Change (Afflux) – Design Case, 1% AEP Event
DES_AFF_001CC	Flood Level Change (Afflux) – Design Case, 1% AEP Event with Climate Change
DES_AFF_PMF	Flood Level Change (Afflux) – Design Case, PMF Event
DES_CHV_020	Flood Velocity Change – Design Case, 20% AEP Event
DES_CHV_010	Flood Velocity Change – Design Case, 10% AEP Event
DES_CHV_005	Flood Velocity Change – Design Case, 5% AEP Event
DES_CHV_002	Flood Velocity Change – Design Case, 2% AEP Event
DES_CHV_001	Flood Velocity Change – Design Case, 1% AEP Event
DES_CHV_001CC	Flood Velocity Change – Design Case, 1% AEP Event with Climate Change
DES_CHV_PMF	Flood Velocity Change – Design Case, PMF Event
DES_CHDUR_020	Flood Duration Change – Design Case, 20% AEP Event
DES_CHDUR_010	Flood Duration Change – Design Case, 10% AEP Event
DES_CHDUR_005	Flood Duration Change – Design Case, 5% AEP Event
DES_CHDUR_002	Flood Duration Change – Design Case, 2% AEP Event
DES_CHDUR_001	Flood Duration Change – Design Case, 1% AEP Event
DES_CHDUR_001CC	Flood Duration Change – Design Case, 1% AEP Event with Climate Change
DES_CHDUR_PMF	Flood Duration Change – Design Case, PMF Event
DES_CHHAZ_020	Flood Hazard (Velocity x Depth) Change – Design Case, 20% AEP Event
DES_CHHAZ_010	Flood Hazard (Velocity x Depth) Change – Design Case, 10% AEP Event
DES_CHHAZ_005	Flood Hazard (Velocity x Depth) Change – Design Case, 5% AEP Event
DES_CHHAZ_002	Flood Hazard (Velocity x Depth) Change – Design Case, 2% AEP Event
DES_CHHAZ_001	Flood Hazard (Velocity x Depth) Change – Design Case, 1% AEP Event
DES_CHHAZ_001CC	Flood Hazard (Velocity x Depth) Change – Design Case, 1% AEP Event with Climate Change
DES_CHHAZ_PMF	Flood Hazard (Velocity x Depth) Change – Design Case, PMF Event

B.3 Duration change

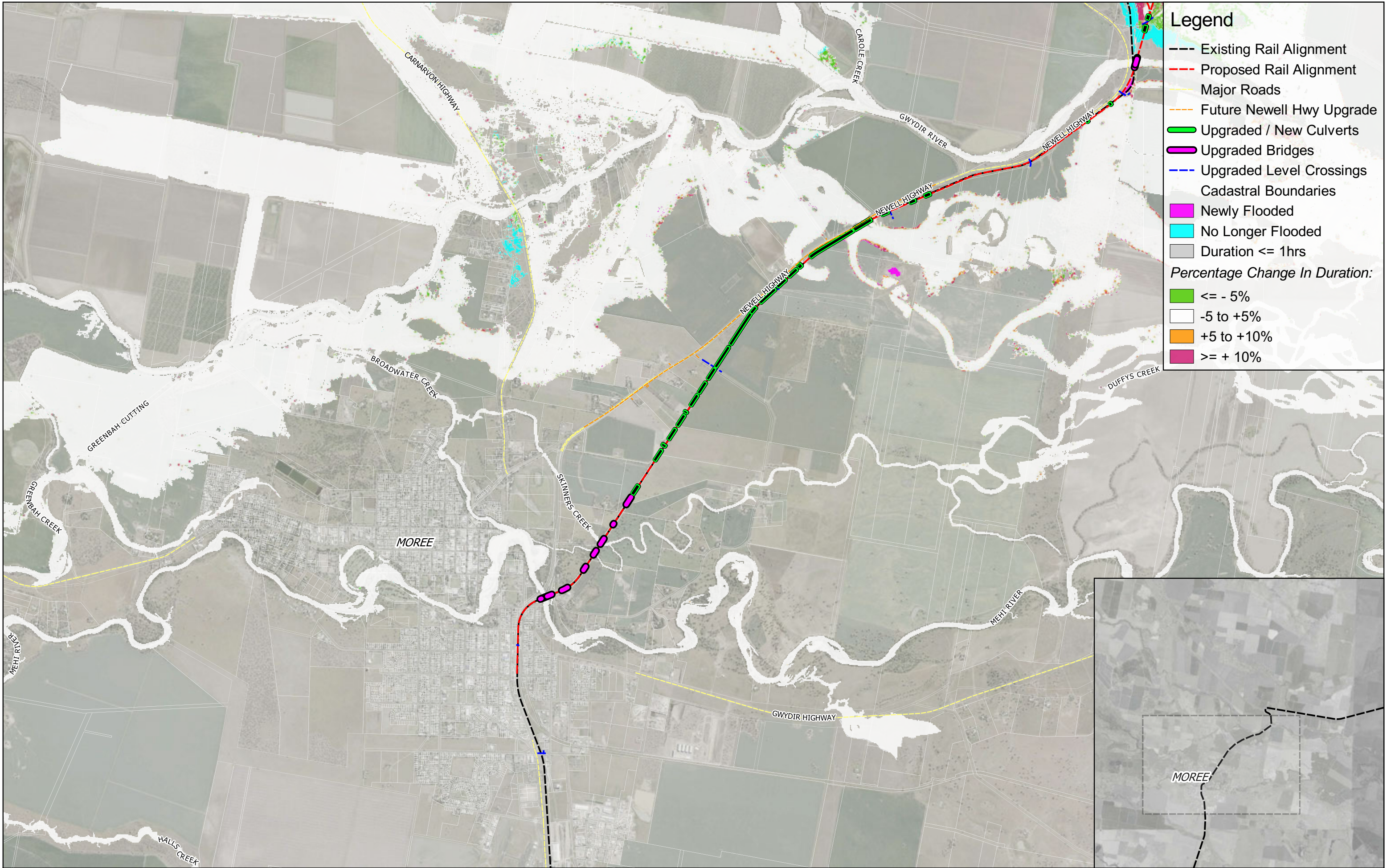
Map list

MAP SET ID	MAP CONTENTS
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DES_CHDUR_010	Flood Duration Change – Design Case, 10% AEP Event
DES_CHDUR_005	Flood Duration Change – Design Case, 5% AEP Event
DES_CHDUR_002	Flood Duration Change – Design Case, 2% AEP Event
DES_CHDUR_001	Flood Duration Change – Design Case, 1% AEP Event
DES_CHDUR_001CC	Flood Duration Change – Design Case, 1% AEP Event with Climate Change
DES_CHDUR_PMF	Flood Duration Change – Design Case, PMF Event



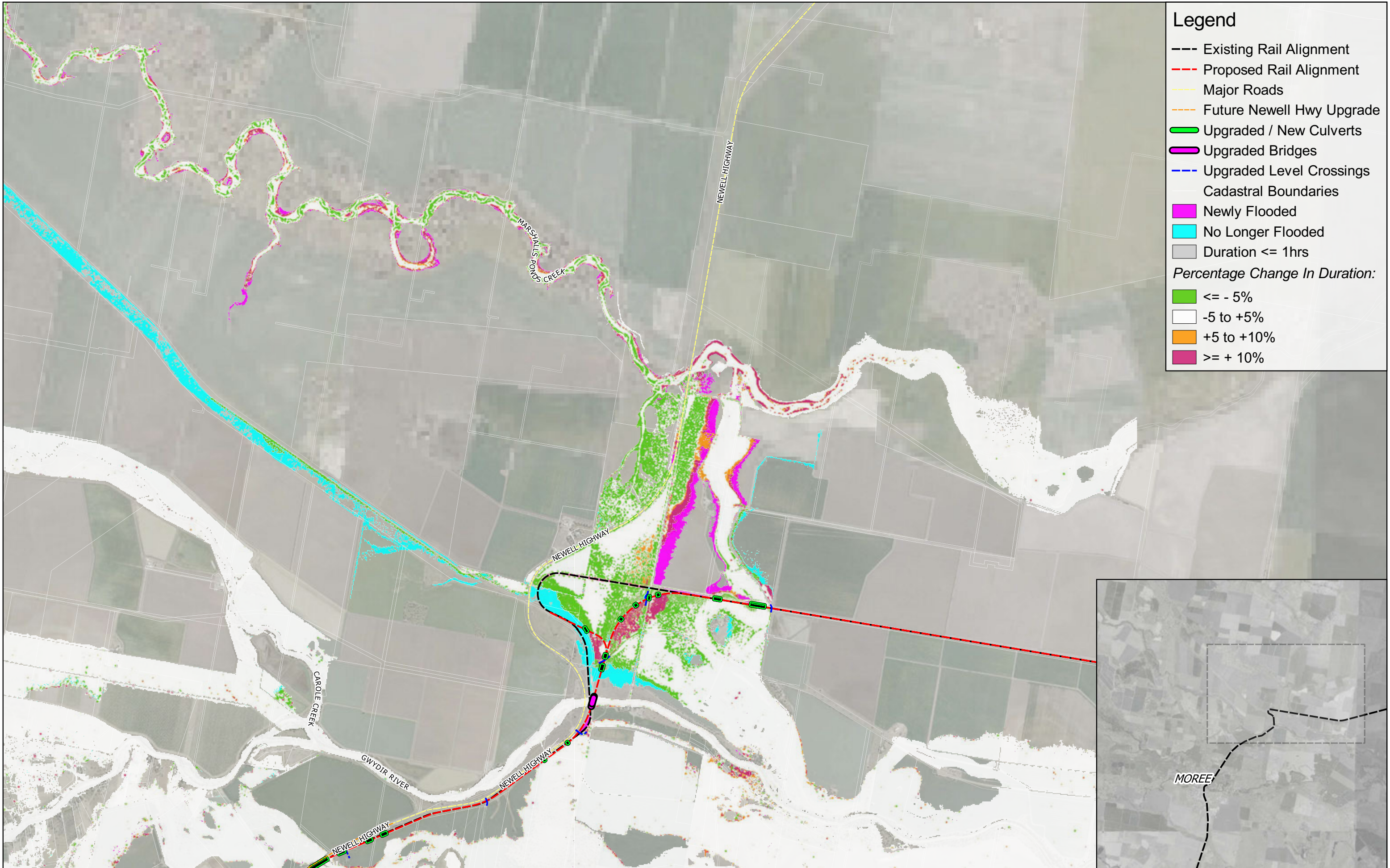
Legend

- Existing Rail Alignment
- Proposed Rail Alignment
- Major Roads
- Future Newell Hwy Upgrade
- Upgraded / New Culverts
- Upgraded Bridges
- Upgraded Level Crossings
- Cadastral Boundaries
- Newly Flooded
- No Longer Flooded
- Duration <= 1hrs
- Percentage Change In Duration:
 - <= - 5%
 - 5 to +5%
 - +5 to +10%
 - >= + 10%



Legend

- Existing Rail Alignment
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 - +5 to +10%
 - >= + 10%



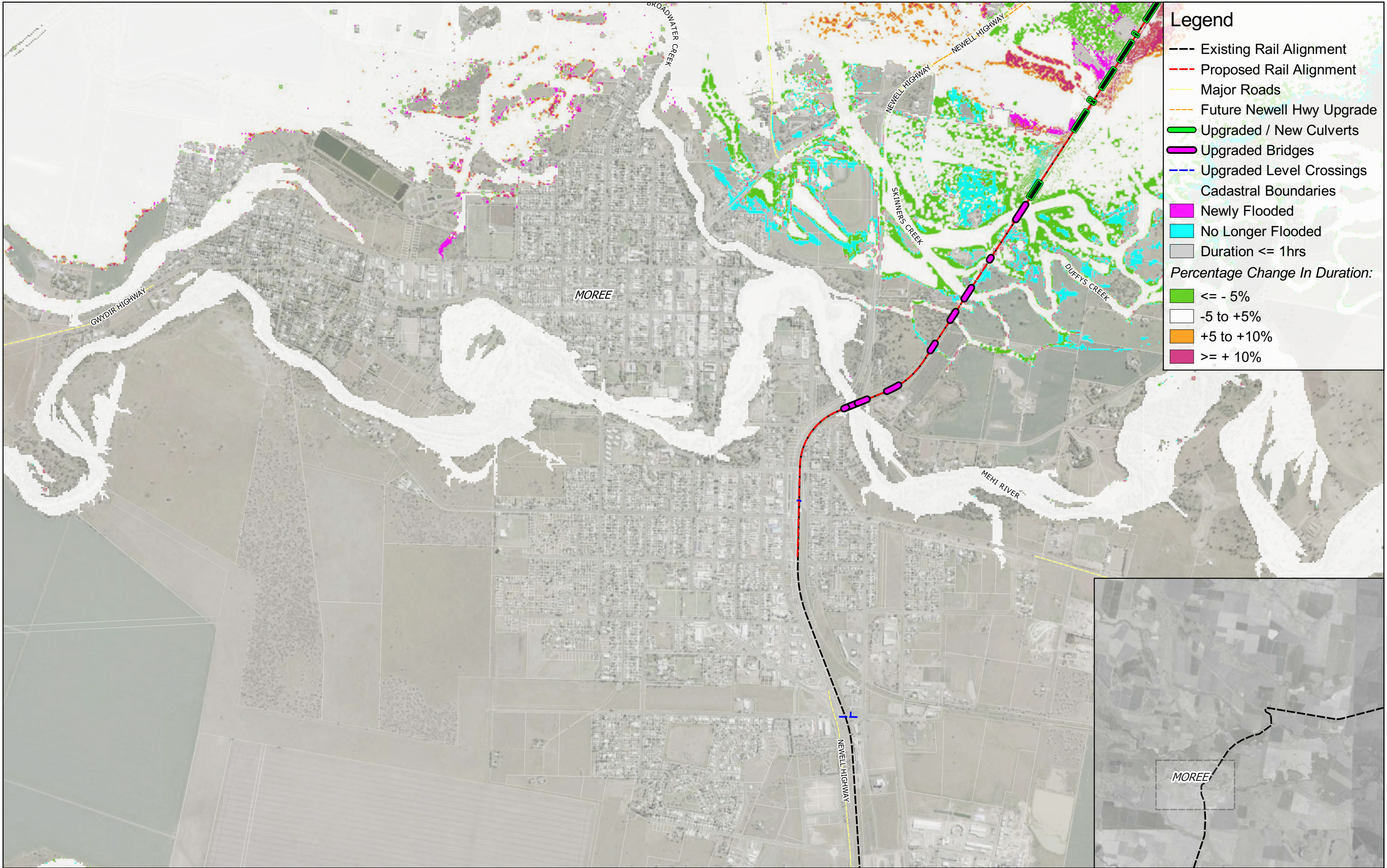
Legend

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- Upgraded Level Crossings
- Cadastral Boundaries
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- No Longer Flooded
- Duration <= 1hrs

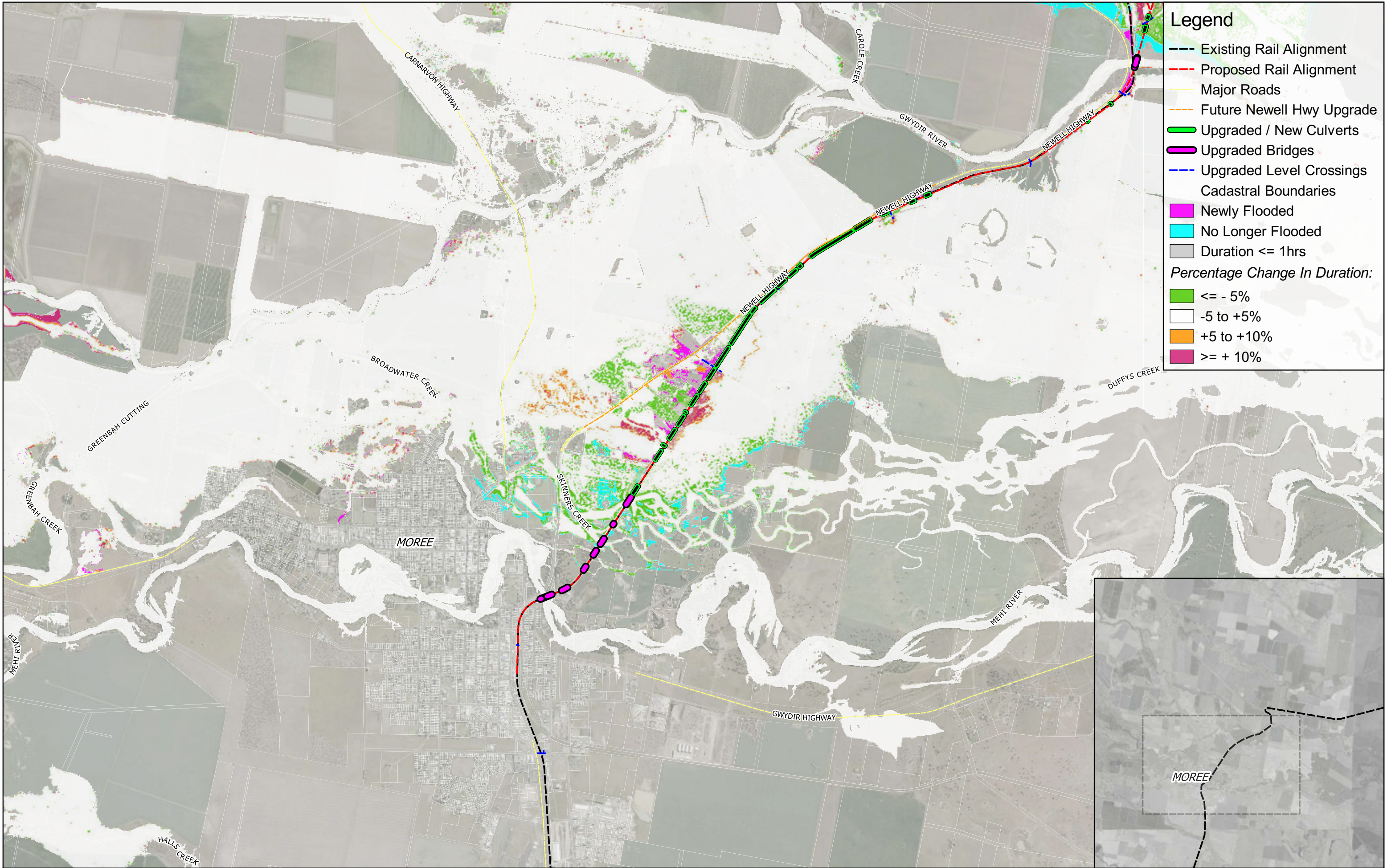
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- -5 to +5%
- +5 to +10%
- >= + 10%

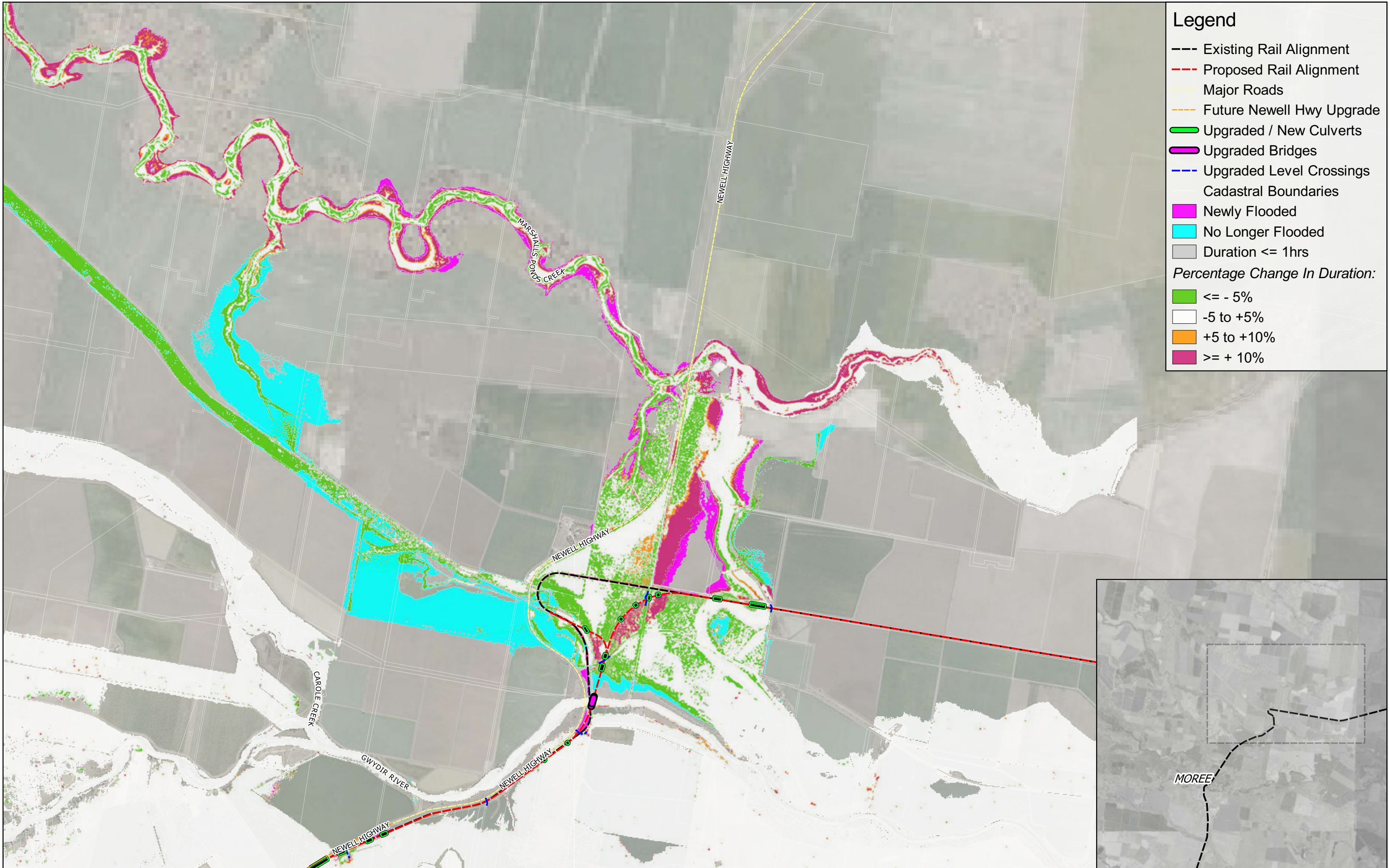




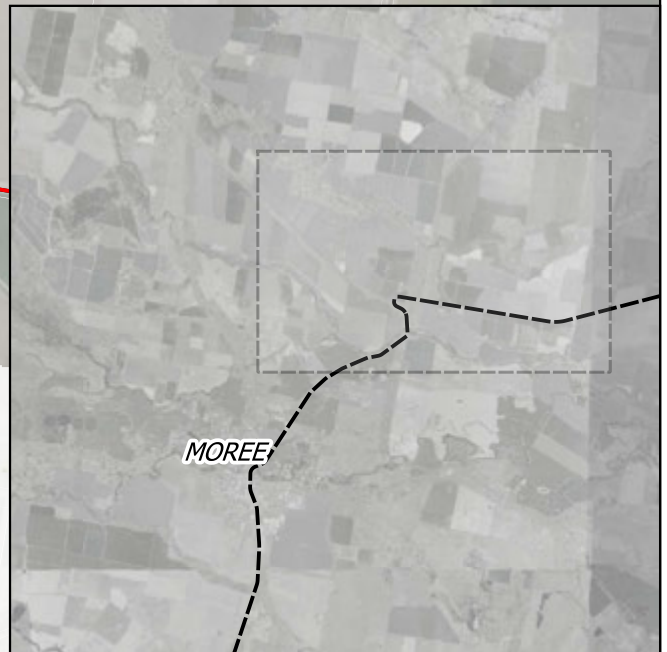
- Legend**
- Existing Rail Alignment
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 - No Longer Flooded
 - Duration <= 1hrs
- Percentage Change In Duration:*
- <= - 5%
 - 5 to +5%
 - +5 to +10%
 - >= + 10%



Prepared for: ARTC
Coordinate system: GDA 1994 MGA Zone 55
Aerial Source: NSW Six Maps
Scale ratio correct when printed at A3

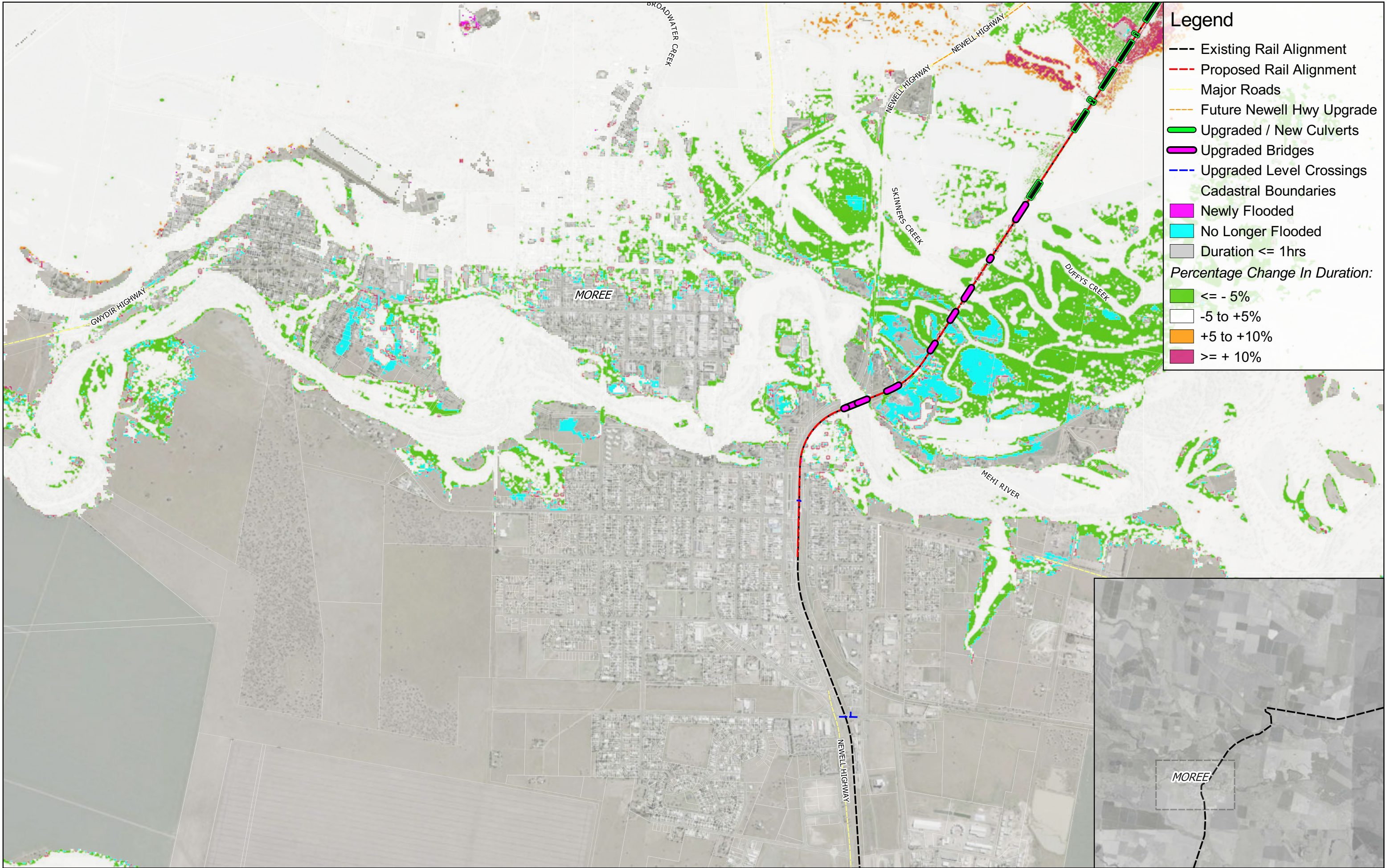
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Scale: 1:40000



Stage: EIS
Version: C
Author: JS
Approved by: RL
Date: 22/03/2022

Inland Rail - Narrabri to North Star Phase 2
Peak Flood Change In Duration - Proposed Design Scenario
Event: 10% AEP
Sheet 3
Map ID: DES_CHDUR_010_3

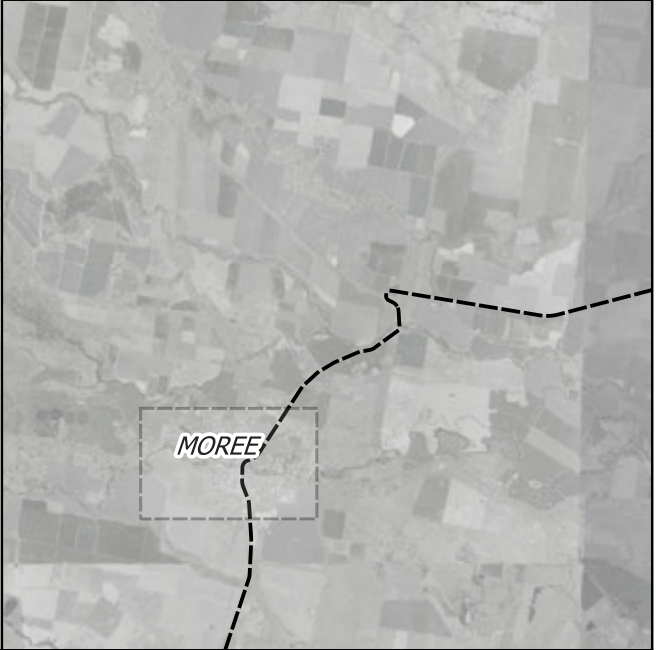


Legend

- Existing Rail Alignment
- - - Proposed Rail Alignment
- Major Roads
- - - Future Newell Hwy Upgrade
- Upgraded / New Culverts
- Upgraded Bridges
- Upgraded Level Crossings
- Cadastral Boundaries
- Newly Flooded
- No Longer Flooded
- Duration <= 1hrs

Percentage Change In Duration:

- <= - 5%
- -5 to +5%
- +5 to +10%
- >= + 10%



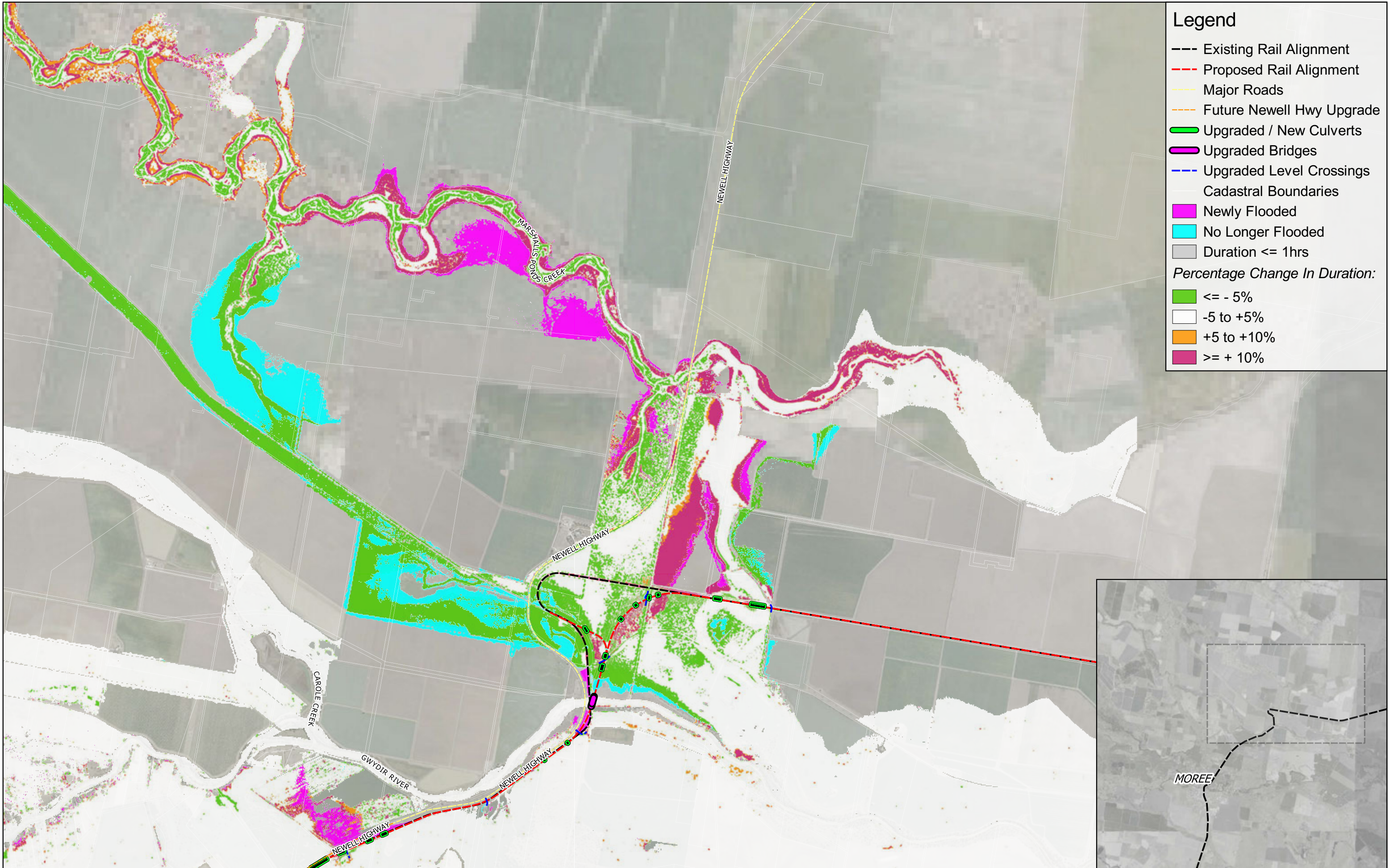


Legend

- Existing Rail Alignment
- Proposed Rail Alignment
- Major Roads
- Future Newell Hwy Upgrade
- Upgraded / New Culverts
- Upgraded Bridges
- Upgraded Level Crossings
- Cadastral Boundaries
- Newly Flooded
- No Longer Flooded
- Duration <= 1hrs

Percentage Change In Duration:

- <= - 5%
- -5 to +5%
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- >= + 10%



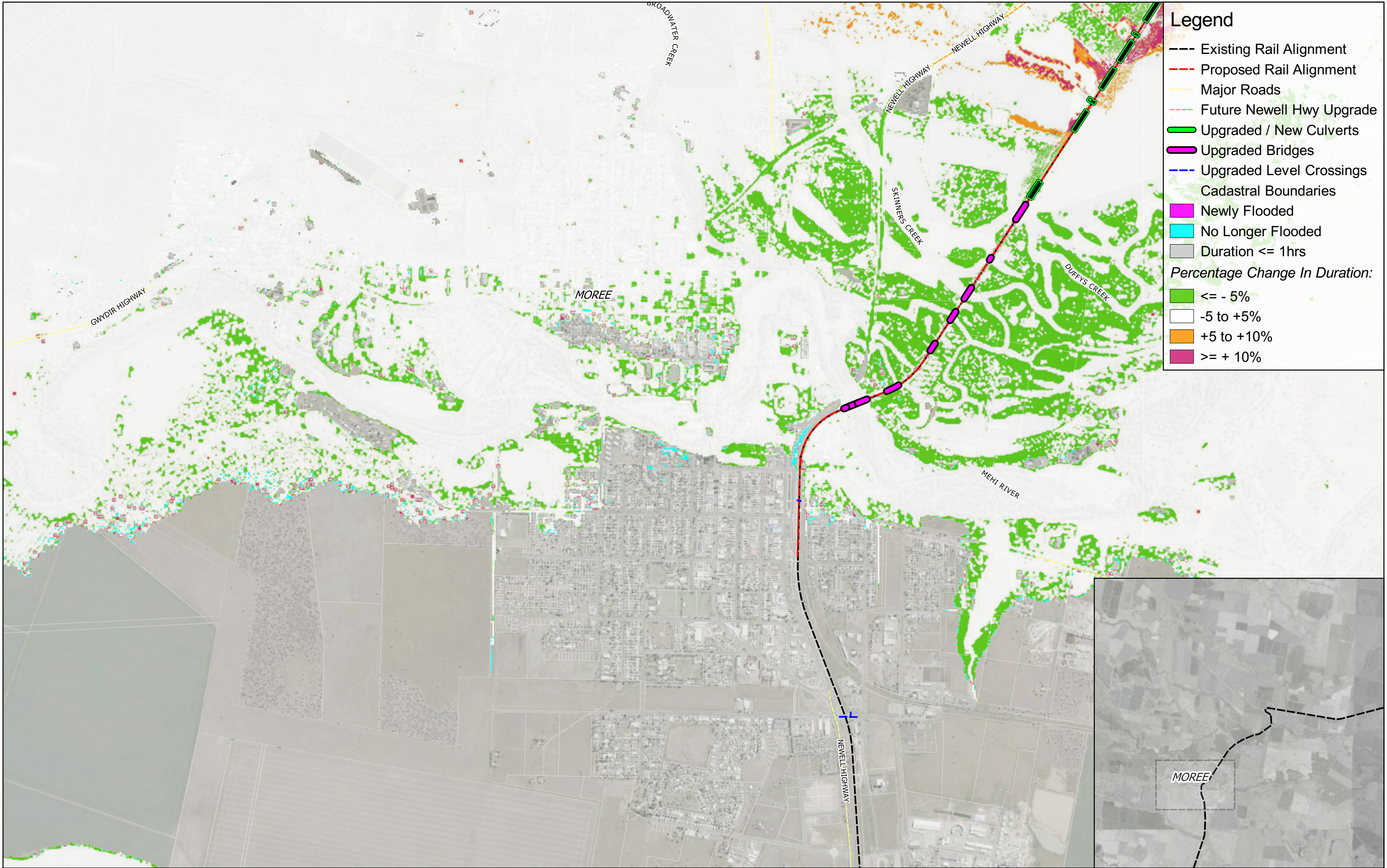
Legend

- Existing Rail Alignment
- - - Proposed Rail Alignment
- Major Roads
- - - Future Newell Hwy Upgrade
- Upgraded / New Culverts
- Upgraded Bridges
- Upgraded Level Crossings
- Cadastral Boundaries
- Newly Flooded
- No Longer Flooded
- Duration <= 1hrs

Percentage Change In Duration:

- <= - 5%
- 5 to +5%
- +5 to +10%
- >= + 10%





Legend

Existing Rail Alignment

Proposed Rail Alignment

Major Roads

Future Newell Hwy Upgrade

Upgraded / New Culverts

Upgraded Bridges

Upgraded Level Crossings

Cadastral Boundaries

Newly Flooded

No Longer Flooded

Duration <= 1hrs

Percentage Change In Duration:

<= - 5%

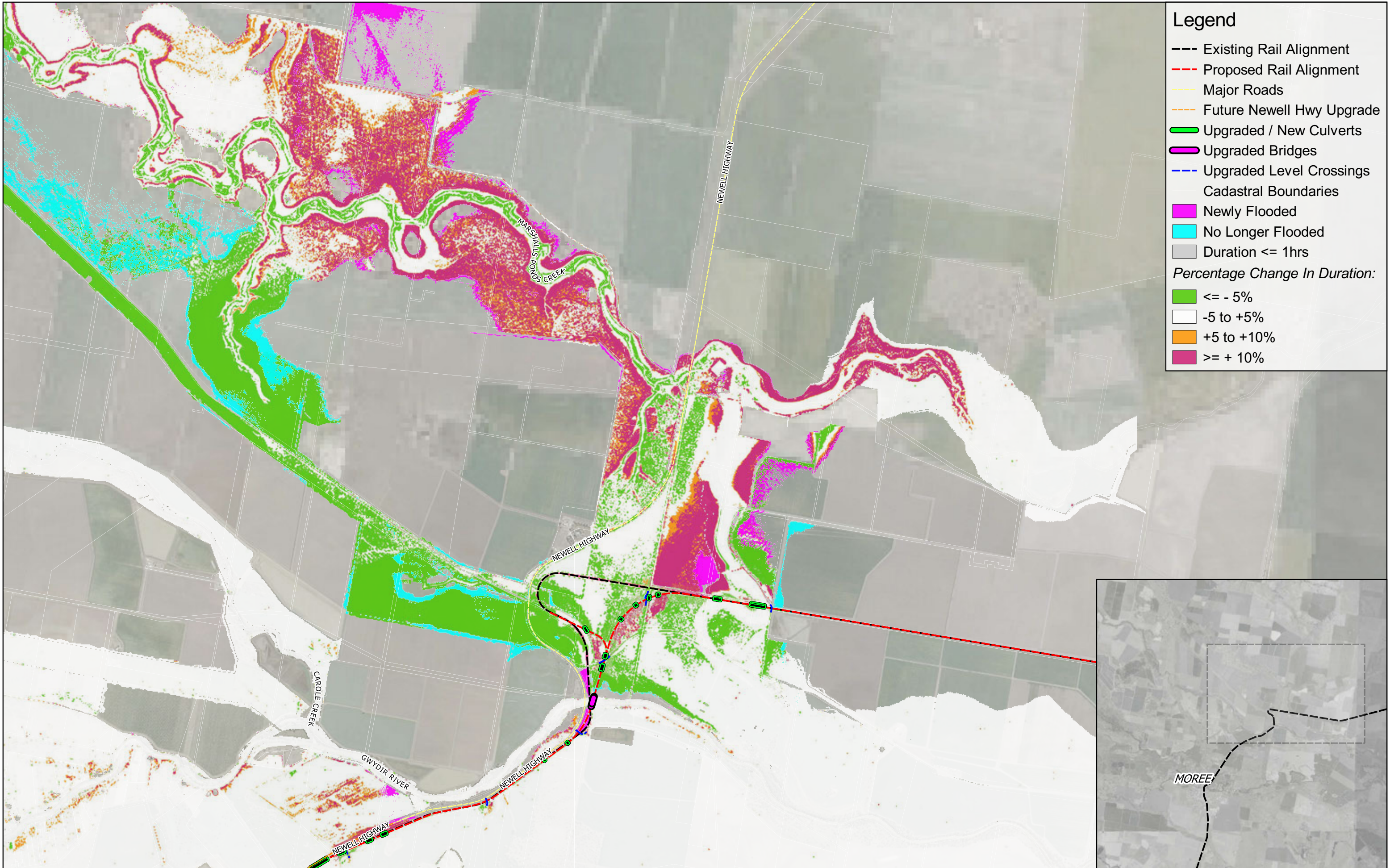
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+5 to +10%

>= + 10%



- Legend**
- Existing Rail Alignment
 - Proposed Rail Alignment
 - Major Roads
 - Future Newell Hwy Upgrade
 - Upgraded / New Culverts
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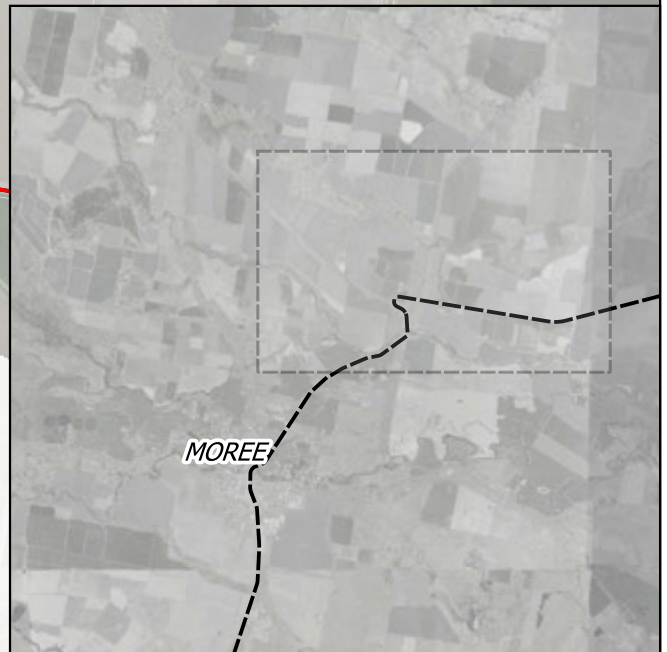


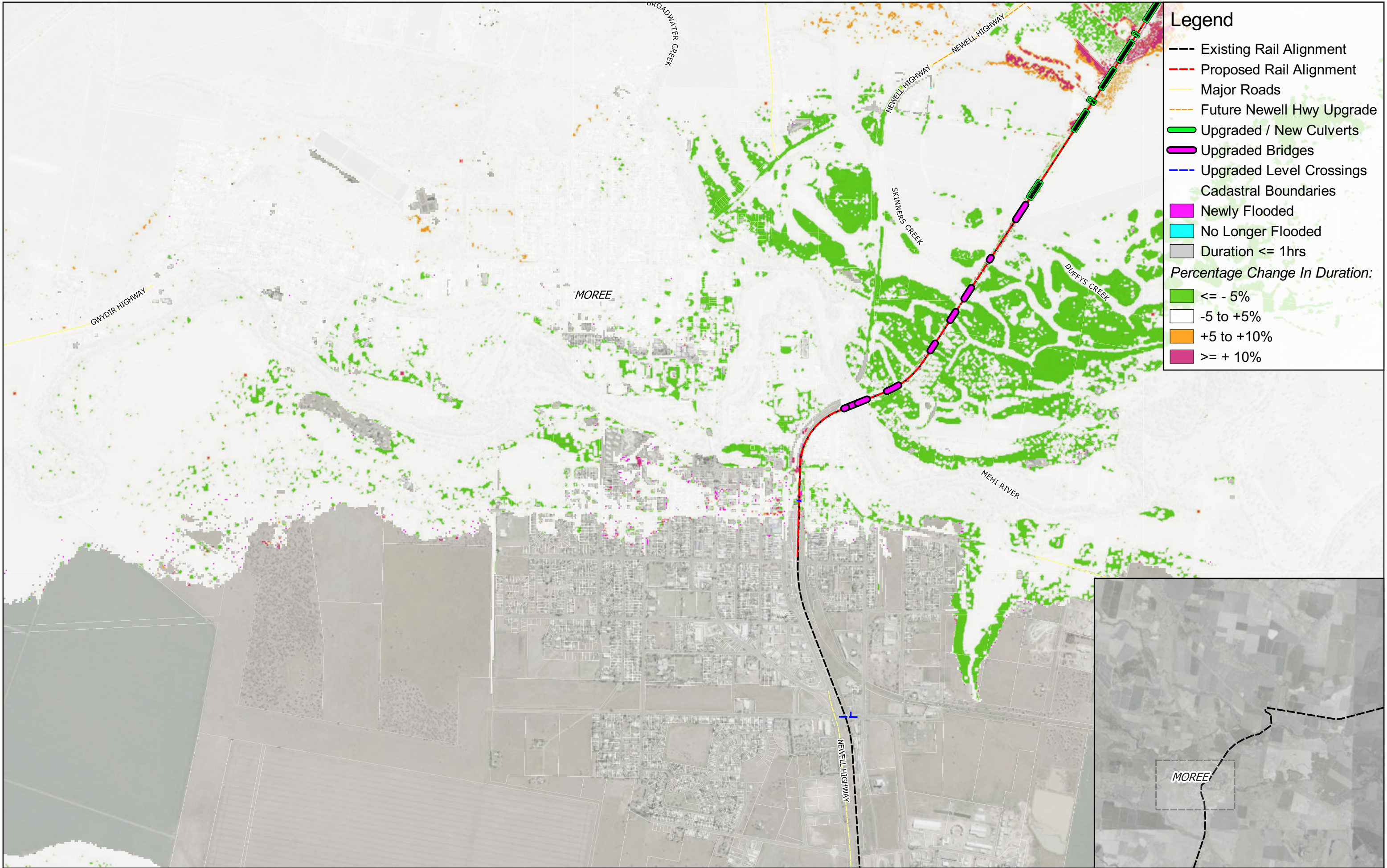
Legend

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Legend

Existing Rail Alignment

Proposed Rail Alignment

Major Roads

Future Newell Hwy Upgrade

Upgraded / New Culverts

Upgraded Bridges

Upgraded Level Crossings

Cadastral Boundaries

Newly Flooded

No Longer Flooded

Duration <= 1hrs

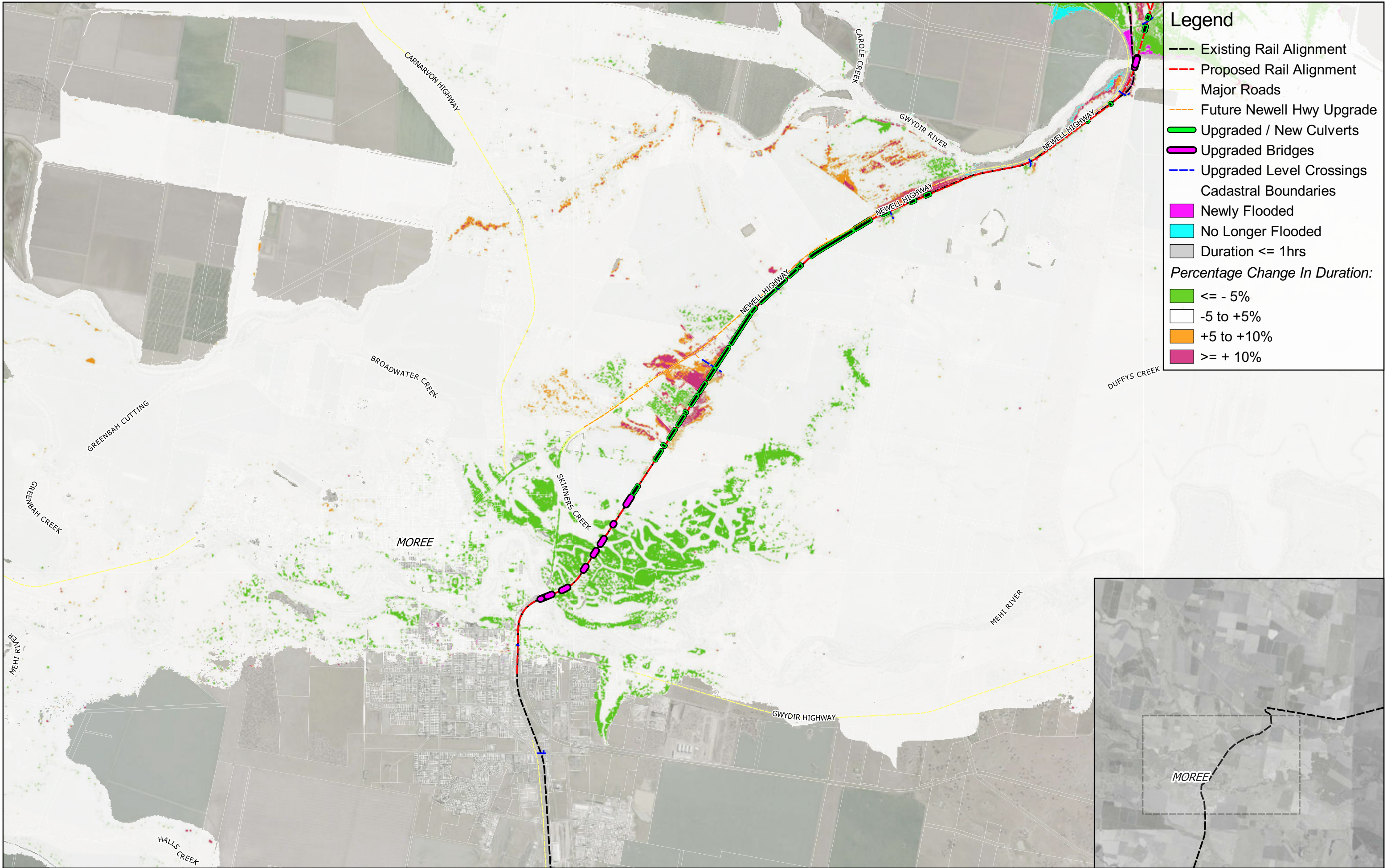
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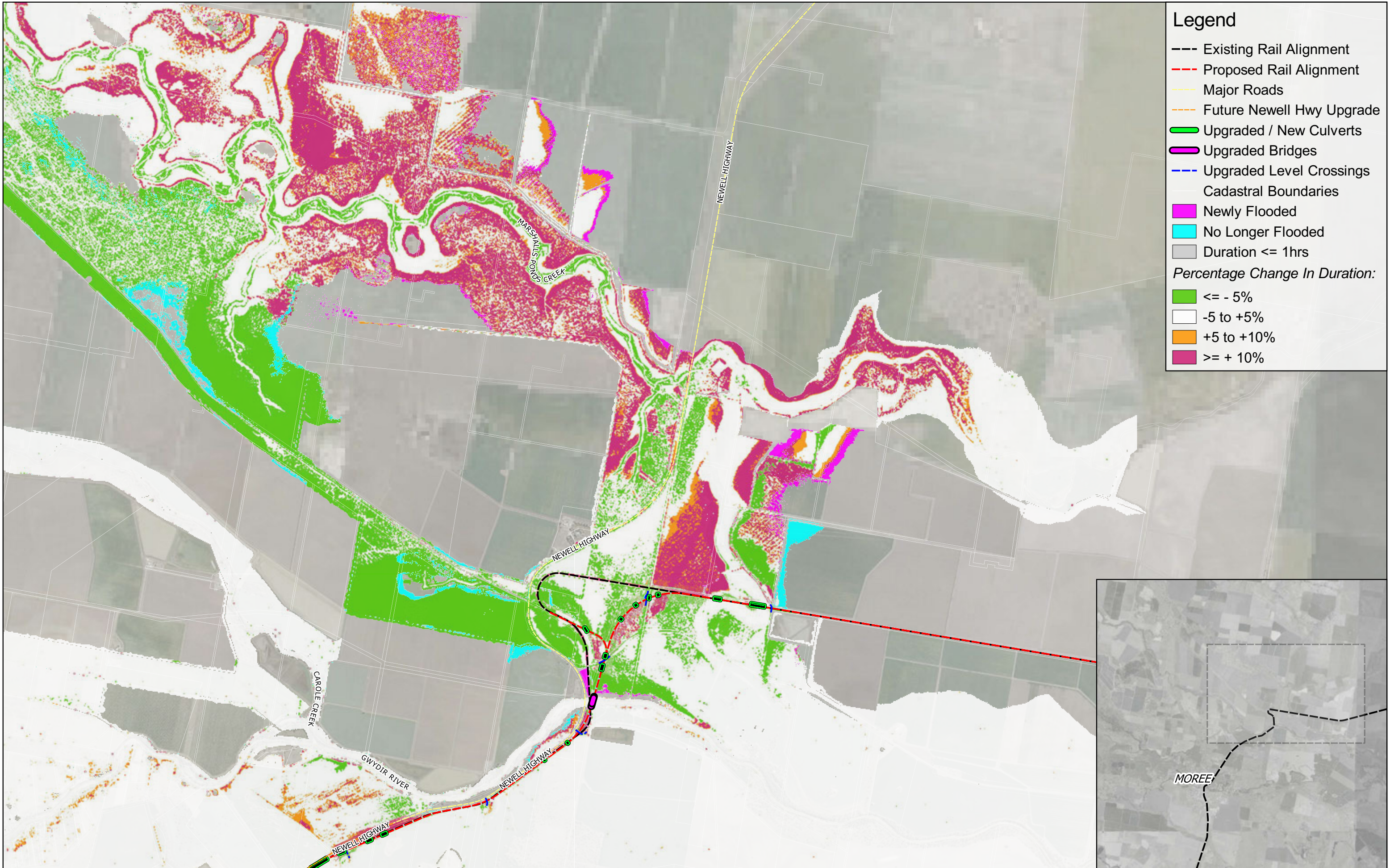
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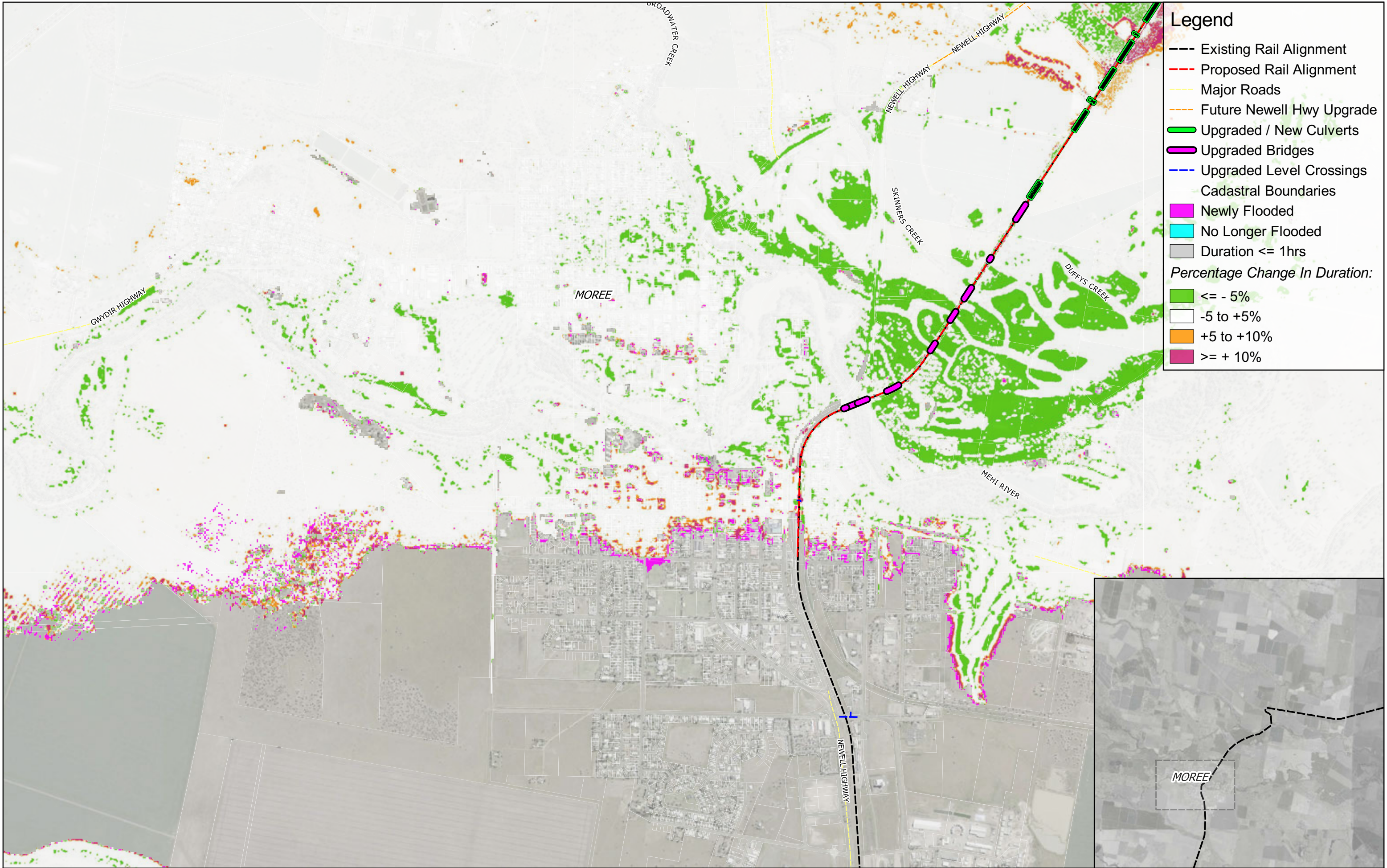
Legend

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Major Roads

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Cadastral Boundaries

Newly Flooded

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Duration <= 1hrs

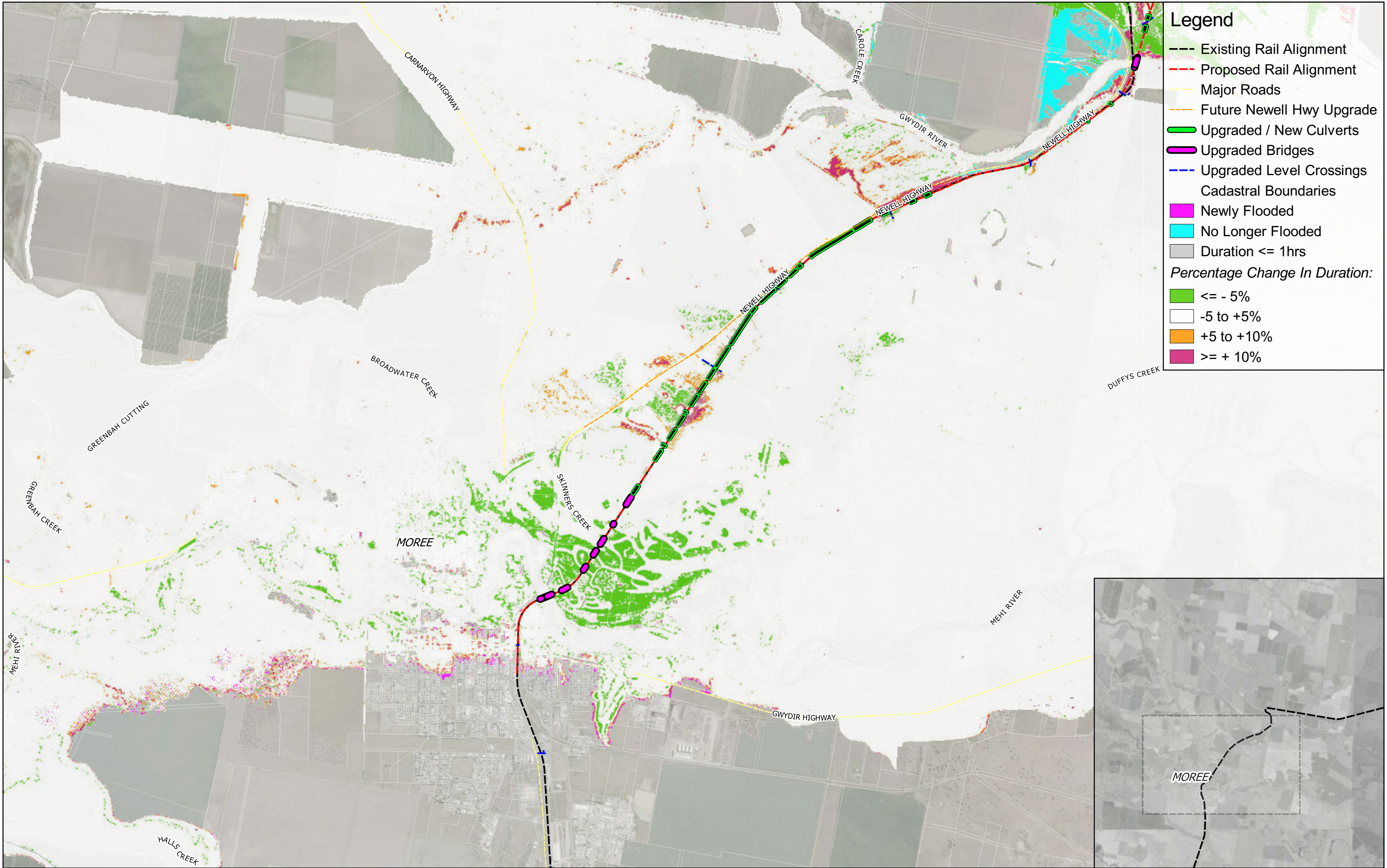
Percentage Change In Duration:

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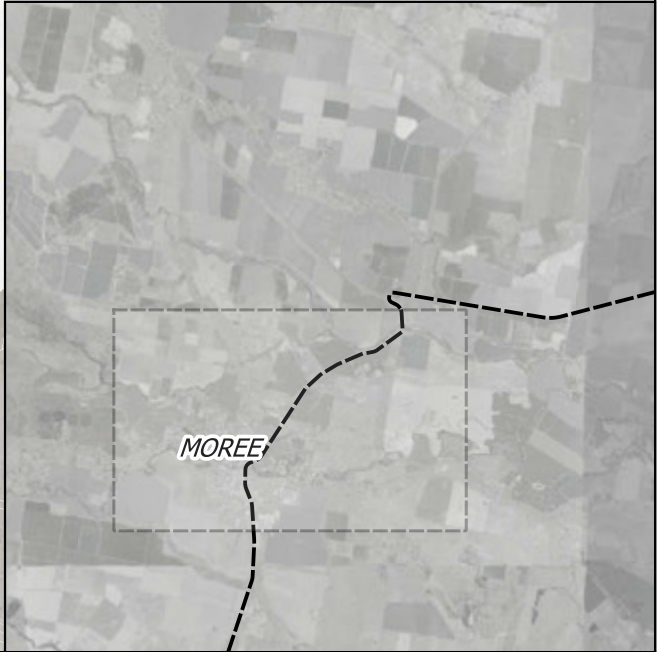
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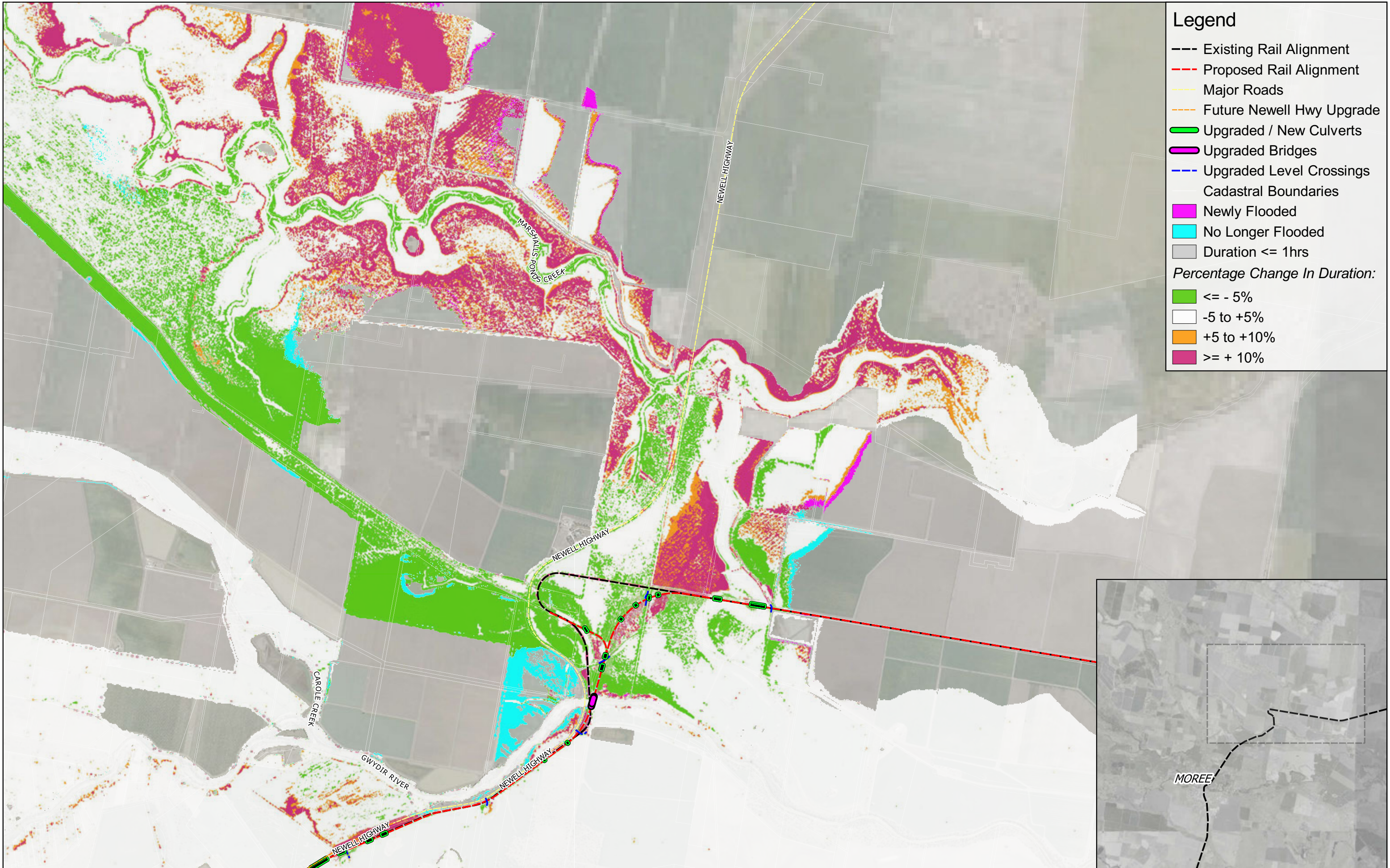
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Scale: 1:40000



Stage: EIS
Version: C
Author: JS
Approved by: RL
Date: 22/03/2022

Inland Rail - Narrabri to North Star Phase 2
Peak Flood Change In Duration - Proposed Design Scenario
Event: 1% AEP Climate Change
Sheet 2
Map ID: DES_CHDUR_001CC_2



Legend

Existing Rail Alignment

Proposed Rail Alignment

Major Roads

Future Newell Hwy Upgrade

Upgraded / New Culverts

Upgraded Bridges

Upgraded Level Crossings

Cadastral Boundaries

Newly Flooded

No Longer Flooded

Duration <= 1hrs

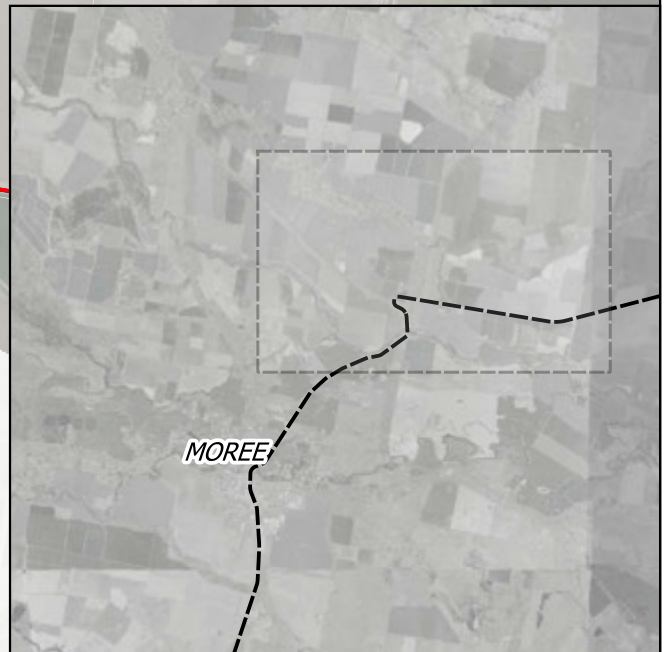
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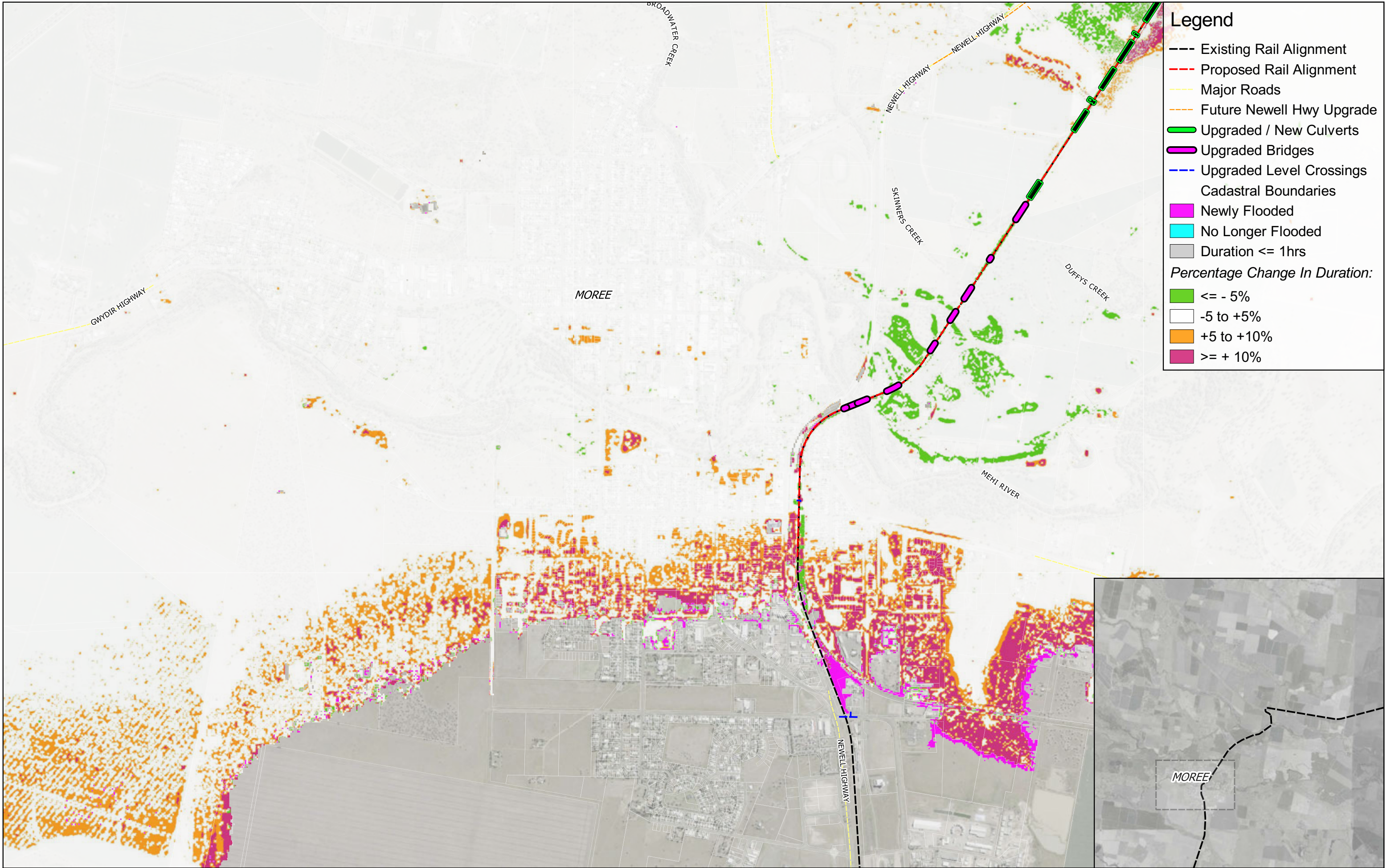
<= - 5%

-5 to +5%

+5 to +10%

>= + 10%





Legend

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Major Roads

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Upgraded / New Culverts

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Upgraded Level Crossings

Cadastral Boundaries

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Duration <= 1hrs

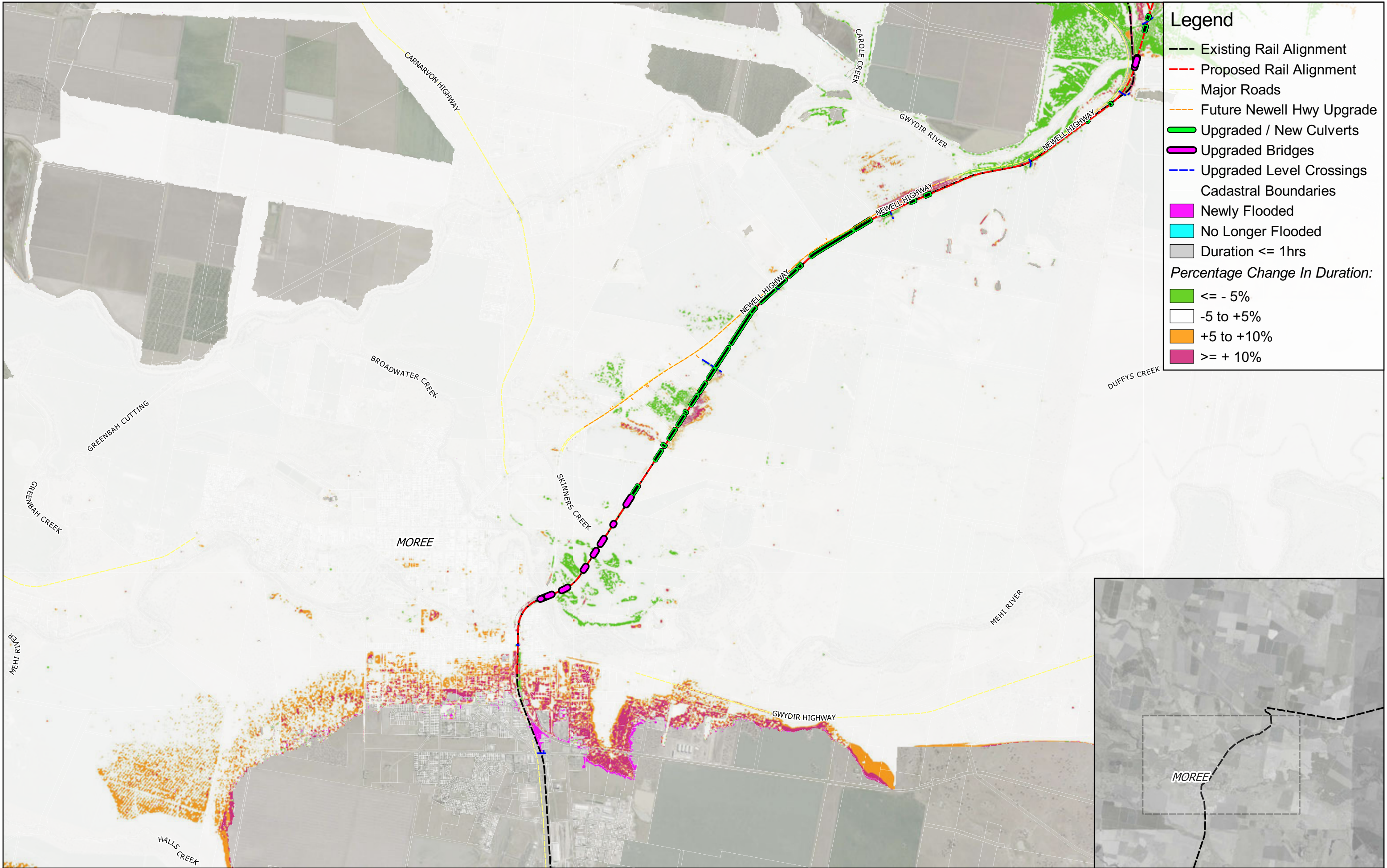
Percentage Change In Duration:

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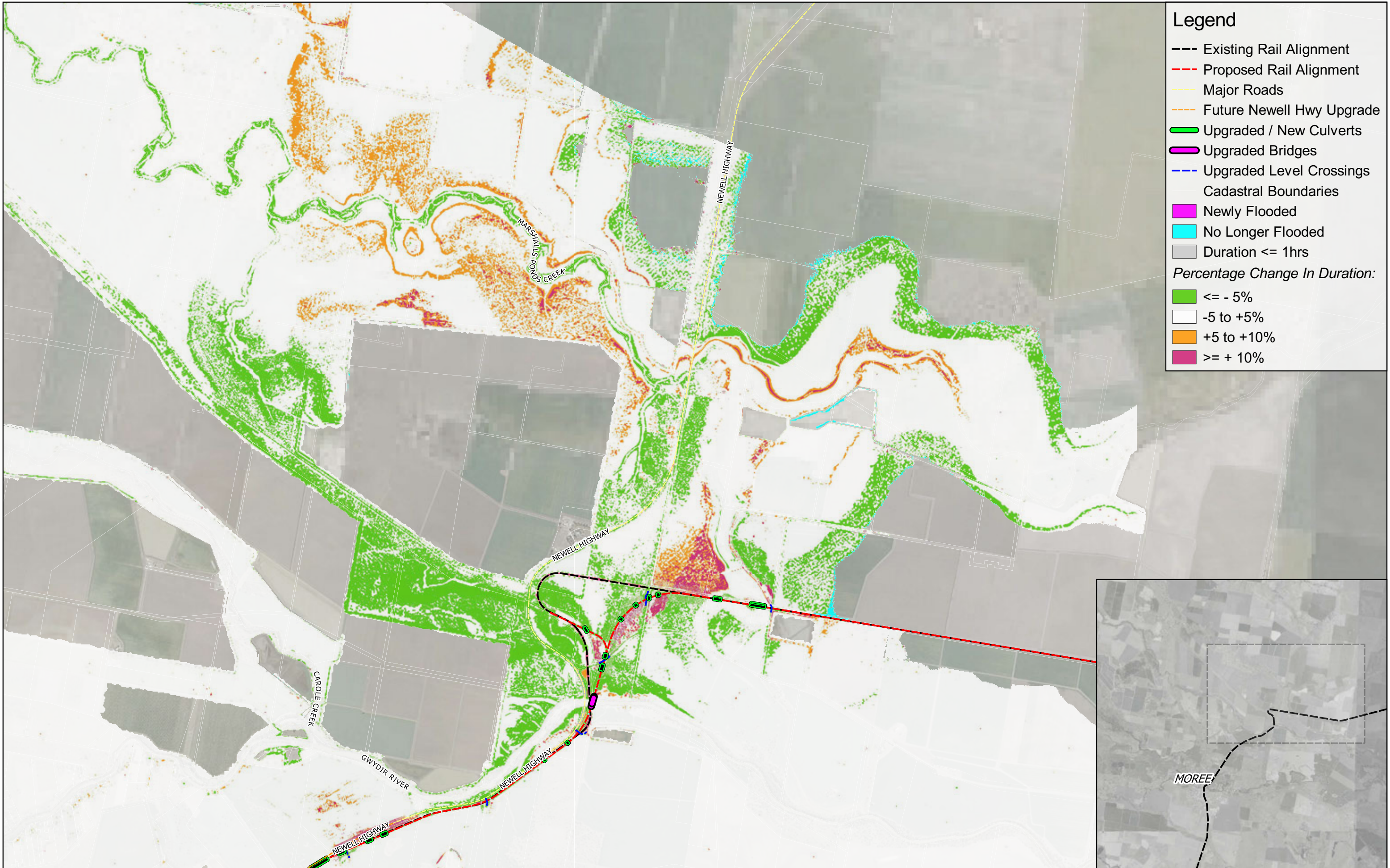
+5 to +10%

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	Prepared for: ARTC Coordinate system: GDA 1994 MGA Zone 55 Aerial Source: NSW Six Maps Scale ratio correct when printed at A3		Stage: EIS Version: C Author: JS Approved by: RL Date: 22/03/2022	Inland Rail - Narrabri to North Star Phase 2 <i>Peak Flood Change In Duration - Proposed Design Scenario</i> Event: PMF Sheet 2 Map ID: DES_CHDUR_PMF_2



Legend

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Proposed Rail Alignment

Major Roads

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