Photo 148

Photo 147

Photo 146

Photo 149

Photo 150

Photo 151

Photo 152

Photo 153

Photo 154

Photo 155

Photo 156

Photo 157

Photo 158

Photo 159

Photo 160

Photo 161

Photo 162

Photo 163

Photo 164

Photo 165

Photo 166

Photo 167

Photo 168

Photo 169

Photo 170

8.1.2 Probable causes

All of the ponding observed in the IA1SE channels was caused by either sediment or debris in the channel or pipes constricting the flow. While there was water ponded all along the channels, in the downstream sections the channel was deep enough that the ponded water was not causing issues for neighbouring properties.

These lower sections are heavily infested with woody weeds on the banks and, where they are not, bank slumping is common.

Where standing water was creating problems for property owners was on the southern branch immediately east of Cupitts Lane where there was standing water across the paddocks. This appears to be caused by the ill-defined outlet from the body of standing water (Photo 144 and Photo 145) as well as siltation further downstream in the channel which may have been triggered by a willow growing from the bank into the channel (Photo 147).

8.1.3 Possible solutions

The removal of the willow and the accumulated silt along with the creation of a better defined and larger capacity outlet from the standing water area should relieve the drainage problem in this area.

Removal of the extensive woody weed infestations and battering and stabilising the channel banks further downstream would deliver other environmental benefits but would make limited impact on the time it takes this area to drain.

Possible solutions are shown in Figure 70.

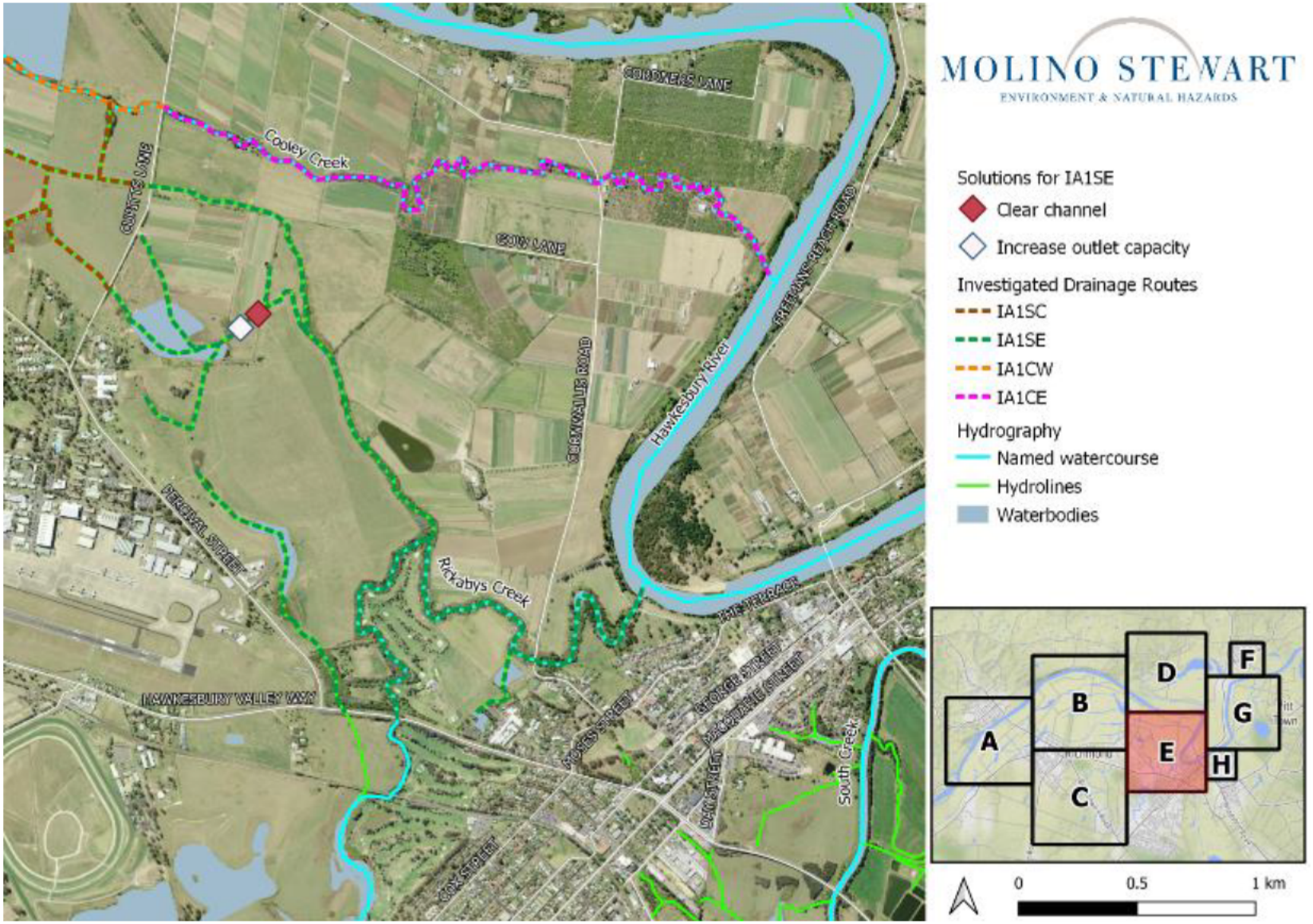

Figure 70: Solutions for IA1SE

8.2 Environmental Constraints

a) Zoning

IA1SE predominantly traverses land zoned as RU2 – Rural Landscape (Figure 71). The upper reaches of some of the branches commence the SP1 – Special Activities zone which Royal Australian Air Force (RAAF) base. East of Cornwallis Road the drainage route, which at this point has become Rickabys Creek, borders and crosses Deerubbin Park which is zoned as RE1.

Maintenance of existing drainage channels, including clearing of the channel, is permitted without consent for zones RU2, SP1 and RE1, while reinstating or rectifying drainage lines requires development consent. Therefore, clearing the existing drainage channel is permissible without consent, while increasing the outlet capacity of the wetland would likely require development approval.

b) Contamination

Environment Protection Authority (EPA) contaminated land records of notices for the Hawkesbury LGA are shown in Table 1. Notified contaminated sites on or near the Hawkesbury Floodplain are shown in Figure 4. There are no EPA contaminated sites within the vicinity of Section B of the Southern Drainage Route.

The majority of drainage route IA1SE is within on-site and off-site PFAS Management Areas for Richmond RAAF Base (Figure 72). At this point no works are suggested within the management area, but if this were to change, those works would require consultation with the Department of Defence prior to commencing any works.

c) Acid Sulphate Soils

The vast majority of this drainage route is surrounded by Class 4 land on the HLEP Acid Sulphate Soils Map (Figure 73). However, small segments east of Percival Street are in Class 5 land including the area of standing water which is poorly drained.

According to the HLEP 2012 Part 6.1, development consent in Class 4 land is required for works more than 2m below the natural ground surface or are likely to lower the watertable by more than 2m below the natural ground surface. For Class 5 land development consent is required for works within 500 m of adjacent Class 1, 2, 3 or 4 land that is below 5 m Australian Height Datum and by which the watertable is likely to be lowered below 1 m Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.

It is unlikely that the suggested works would exceed these thresholds.

d) Heritage

i) HLEP Heritage Items

IA1SE traverses 130–144 Percival Street, Clarendon (Figure 74) which is a property of local heritage significance (I255) It is south of the area recommended for drainage works.

ii) AHIMS Heritage Items

An AHIMS Basic Search of constraints extent E returned 19 Aboriginal Sites (Figure 75). None are within the vicinity of the IA1SE drainage lines. The limited scope of drainage improvement works recommended for this area are not likely to disturb items of Aboriginal heritage significance.

e) Wetlands and Coastal Areas

There are two wetlands identified on the HLEP Wetlands Map and in the R&H SEPP on the IA1SE drainage lines (Figure 76). One is within the RAAF base land and the other is the area of poorly drained standing water where paddocks are flooded.

Before development consent can be granted for any works conducted within the extent of these wetlands the provisions set out in Part 6.5 (3) and (4) of the HLEP and sections 2.7 and 2.8 of the R&H SEPP must be satisfied. These provisions are quoted in Section 3.5 of this report. It is probable that the standing water in this area will need to be maintained but it might be possible that it can be lowered slightly. Detailed investigations would be needed to determine the appropriate water level and extent which needs to be maintained in this wetland. An EIS is likely to be required.

The downstream section of Rickabys Creek is classified as coastal environment area and coastal use area as per the R&H SEPP, however no works are proposed within this section. If any actions are identified for this creek section that would improve drainage, the works would need to follow the provisions set out in sections 2.10 and 2.11 of the R&H SEPP respectively. These provisions are quoted in Section 3.6 of this report.

f) Ecology

i) PCT Mapping

There are two PCTs mapped along IA1SE drainage line. These are PCT 781 and PCT 835 (Figure 77).

PCT 781 is mapped as the two waterbodies which are mapped as wetlands. This includes the area of standing water where it is suggested that improved drainage may be possible. This PCT is referrable to TECs under the BC Act as equivalent to the endangered 'Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions' and 'Sydney Freshwater Wetlands in the Sydney Basin Bioregion'. This may limit what works can be done to lower water levels in this location.

PCT 835 is mapped along the entirety of Rickabys Creek from Hawkesbury Valley Way to its outlet into the Hawkesbury River, and for the segment of the drainage channel connecting to Rickabys Creek and extending approximately 1300 m to the north-northwest. The PCT 835 mapping is questionable because field observations showed this to be mostly woody weeds. It is principally downstream of Cornwallis Road that there is any significant amount of native vegetation.

ii) Terrestrial Biodiversity

The two wetlands and much of the drainage lines are mapped as Significant Vegetation with all of the areas surrounding the drainage lines being mapped Connectivity Between Significant Vegetation (Figure 78).

iii) Biodiversity Values

Three segments of IA1SE are mapped as BV on the DPE BV Map (Figure 79). These are the two wetlands and Rickabys Creek between Hawkesbury Valley Way and Cornwallis Road and another section of Rickabys Creek approximately 250 m east of Cornwallis Road.

iv) Threatened Species Records

There have been sightings of the Little Lorikeet, a Koala and several Grey-headed Flying- within map area E (Figure 80). None have been in the vicinity of the IA1SE drainage lines.

v) Key Fish Habitat

All of Rickabys Creek within IA1SE and the whole of the main drainage line from Cupitts Lane to Rickabys Creek are mapped as KFH (Figure 81). The recommended works, however, are not in areas mapped as KFH.

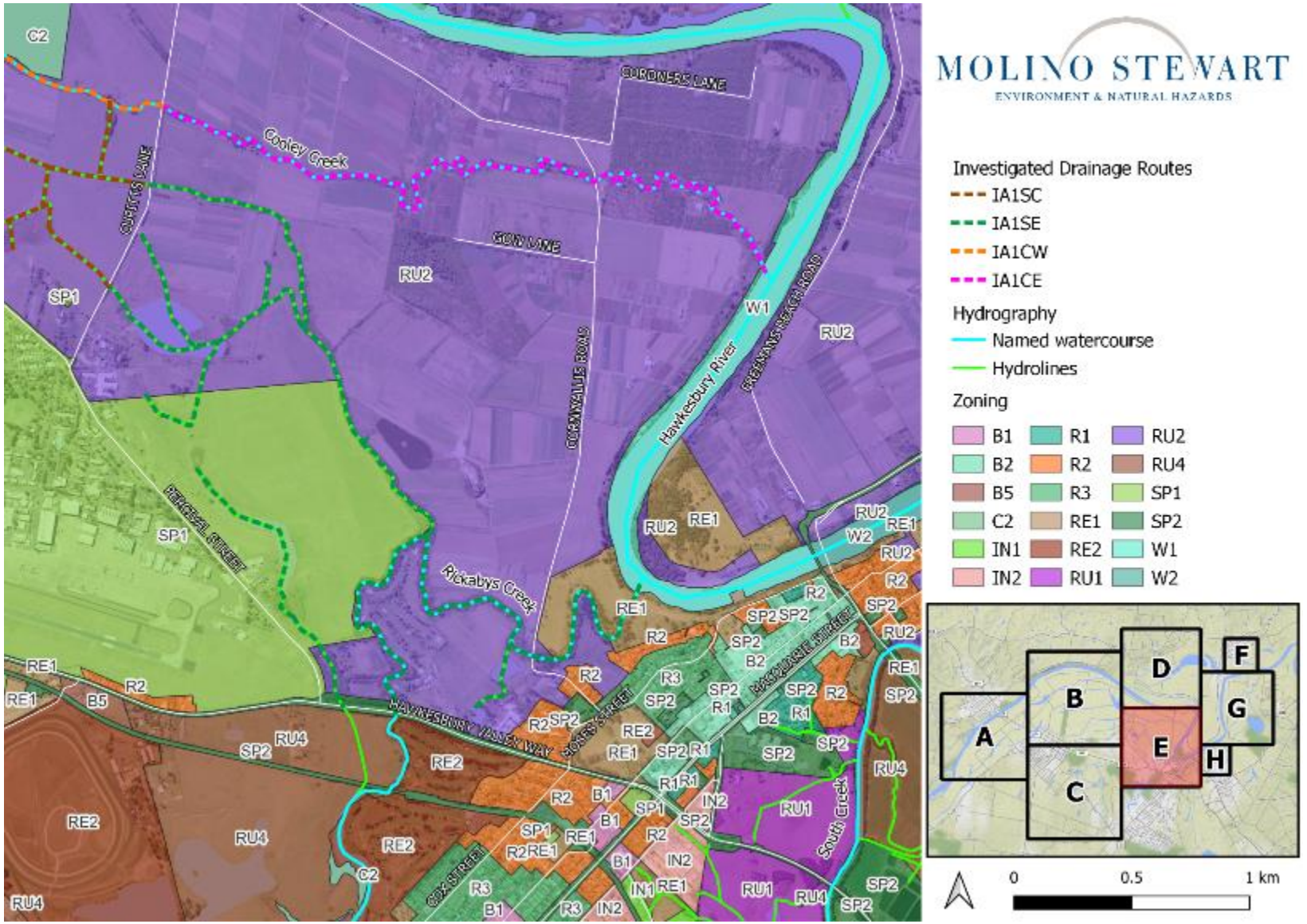

Figure 71: Land Zoning (Extent E)

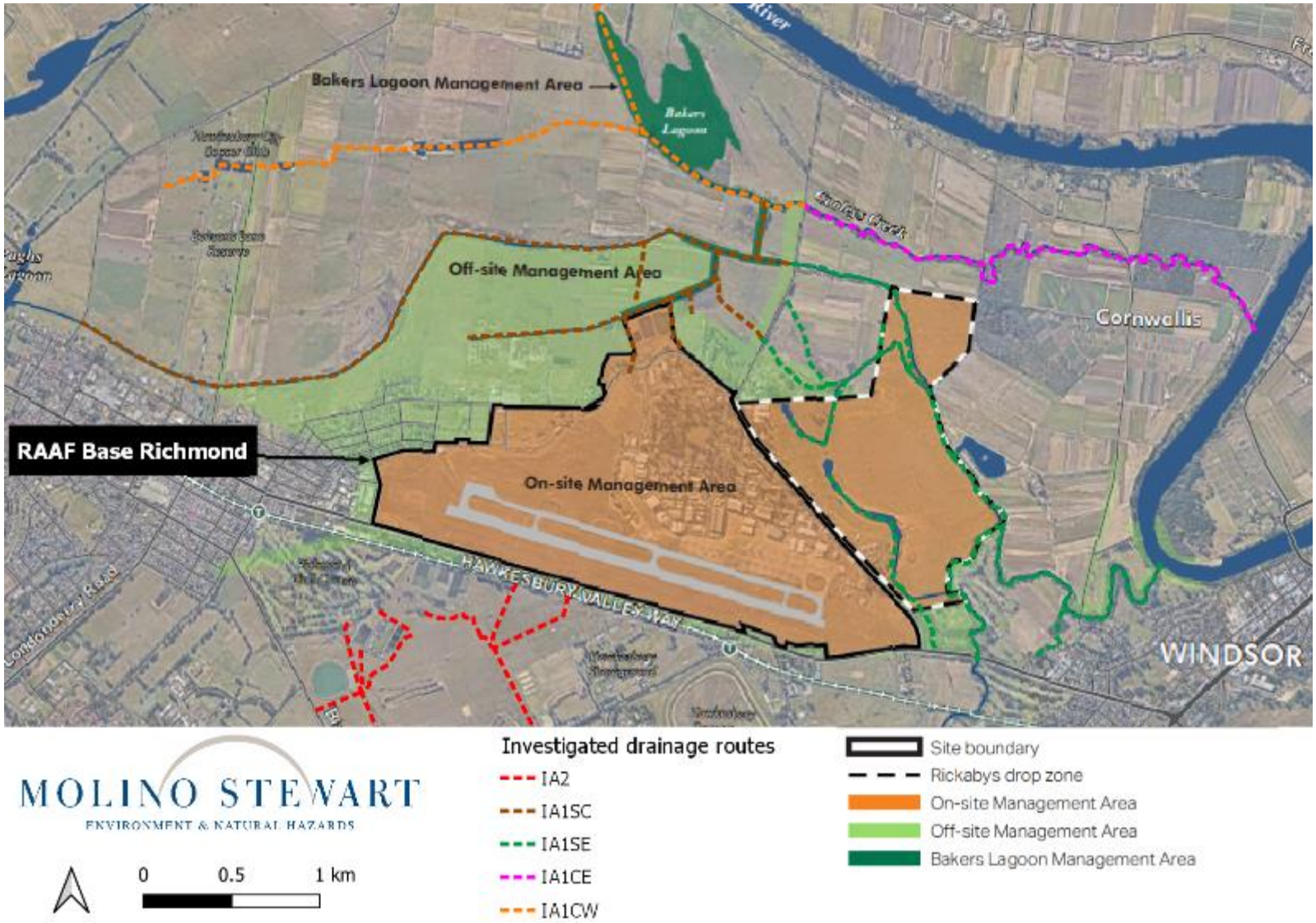

Figure 72: PFAS Management Areas

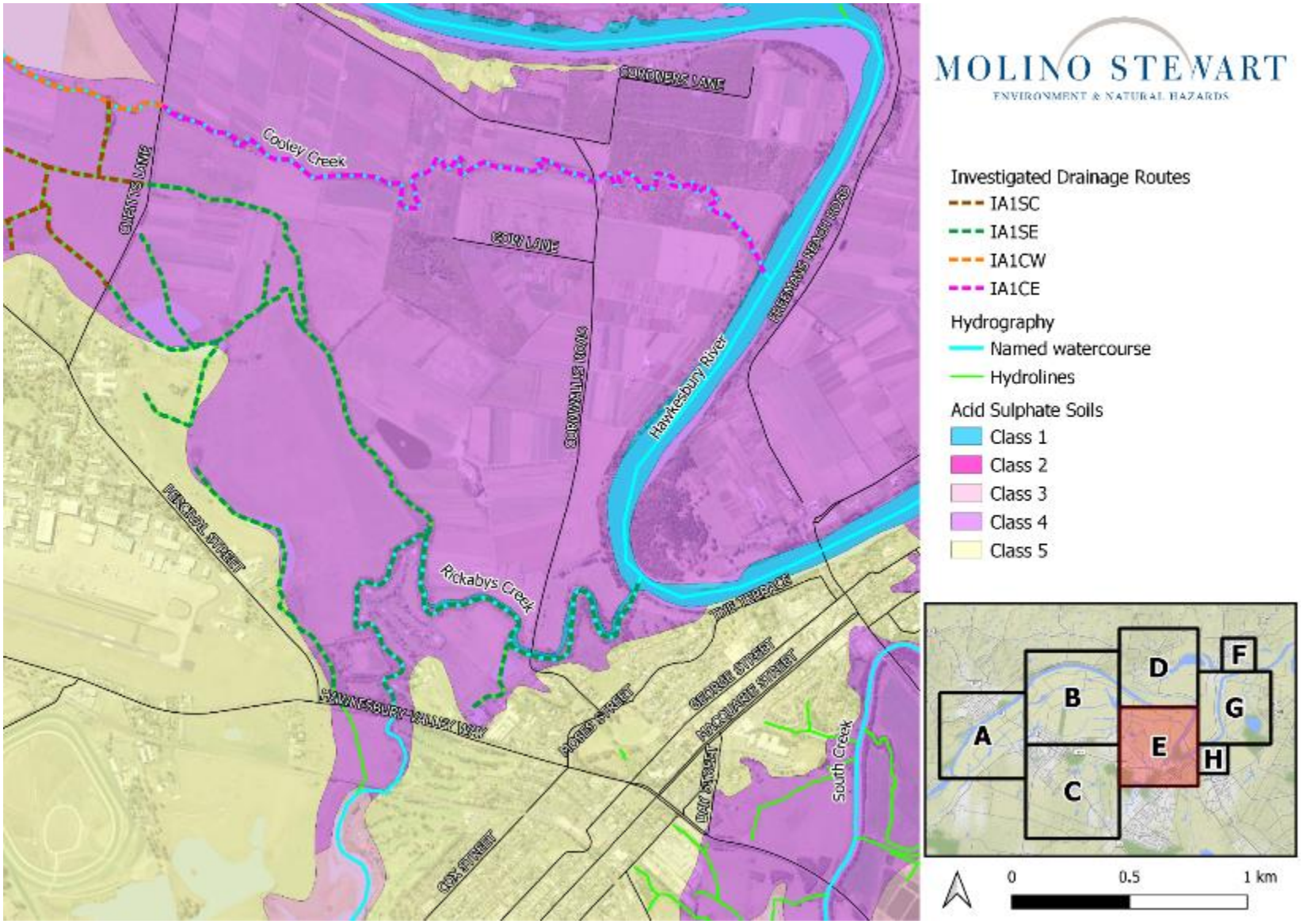

Figure 73: Acid Sulphate Soils (Extent E)

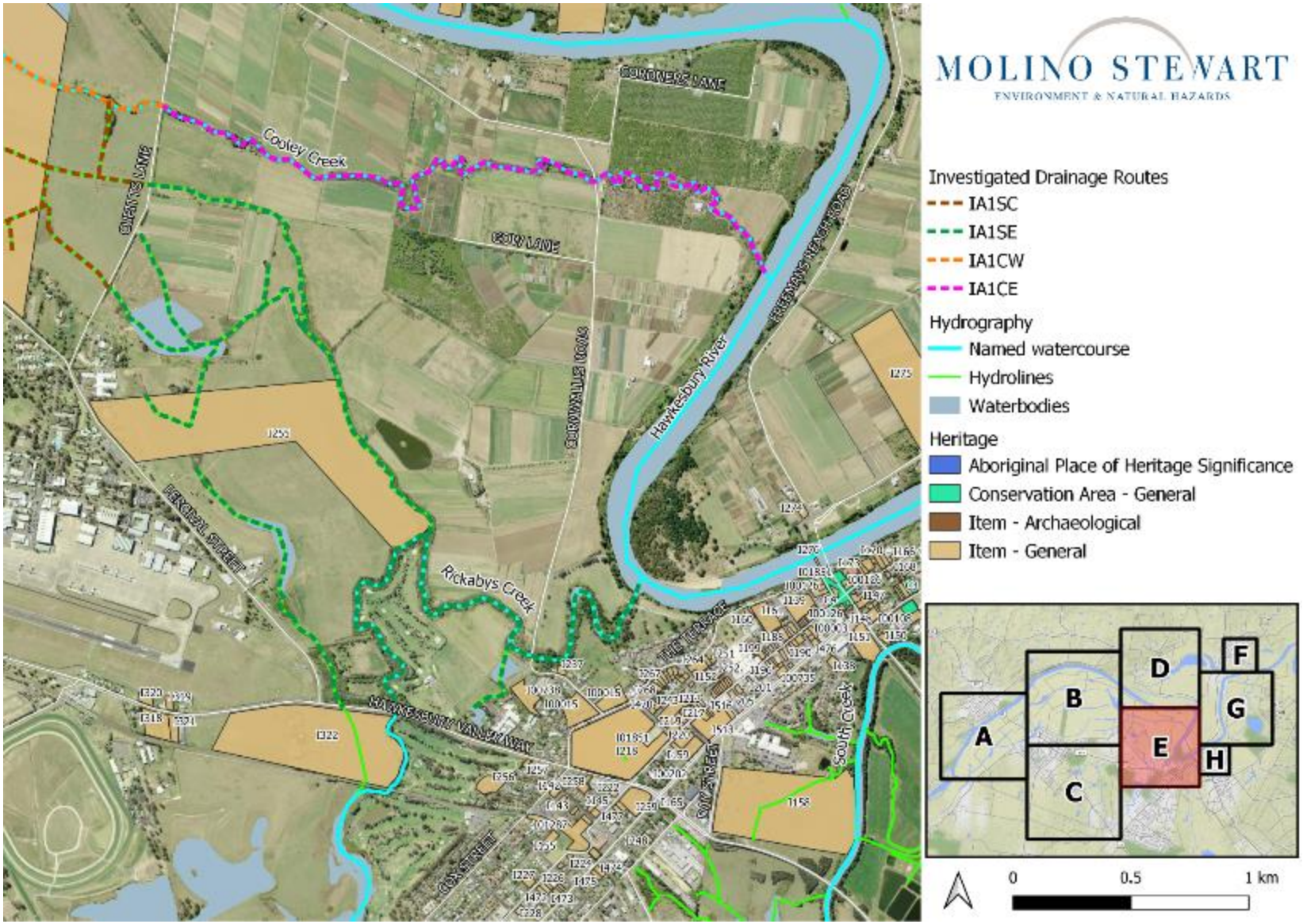

Figure 74: HLEP Heritage Places, Areas and Items (Extent E)

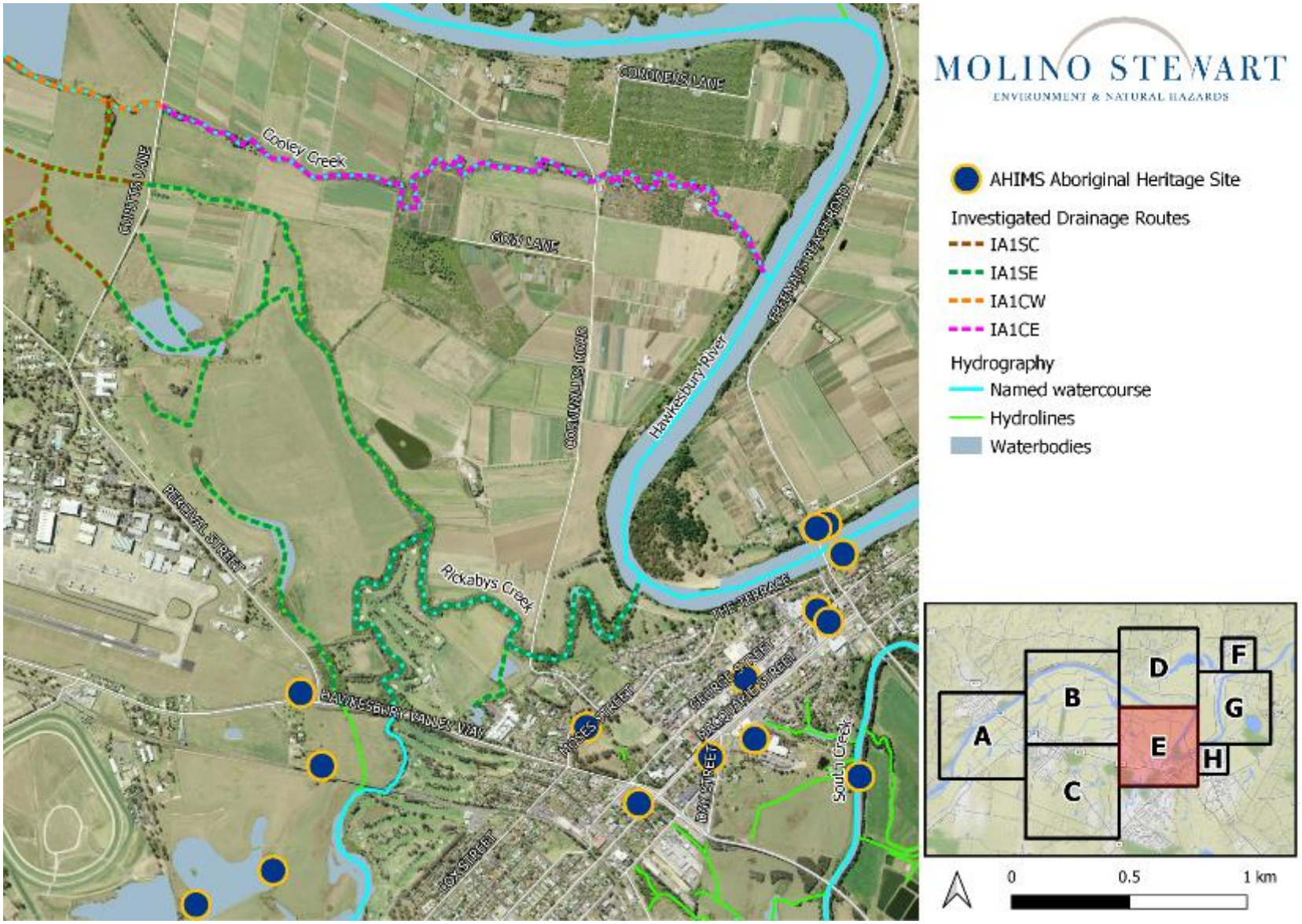

Figure 75: AHIMS Aboriginal Sites (Extent E)

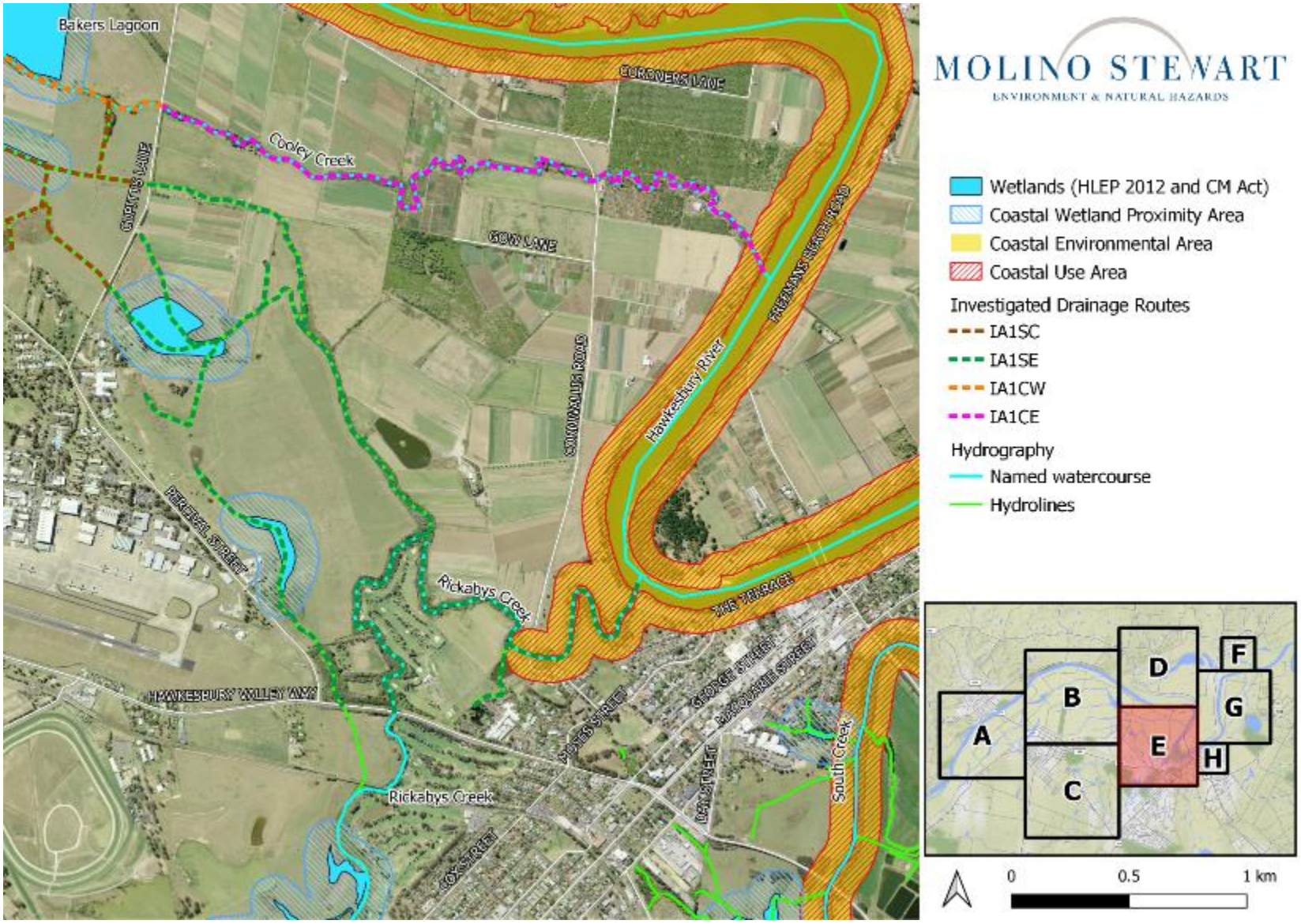

Figure 76: Wetlands and Coastal Management Areas (Extent E)

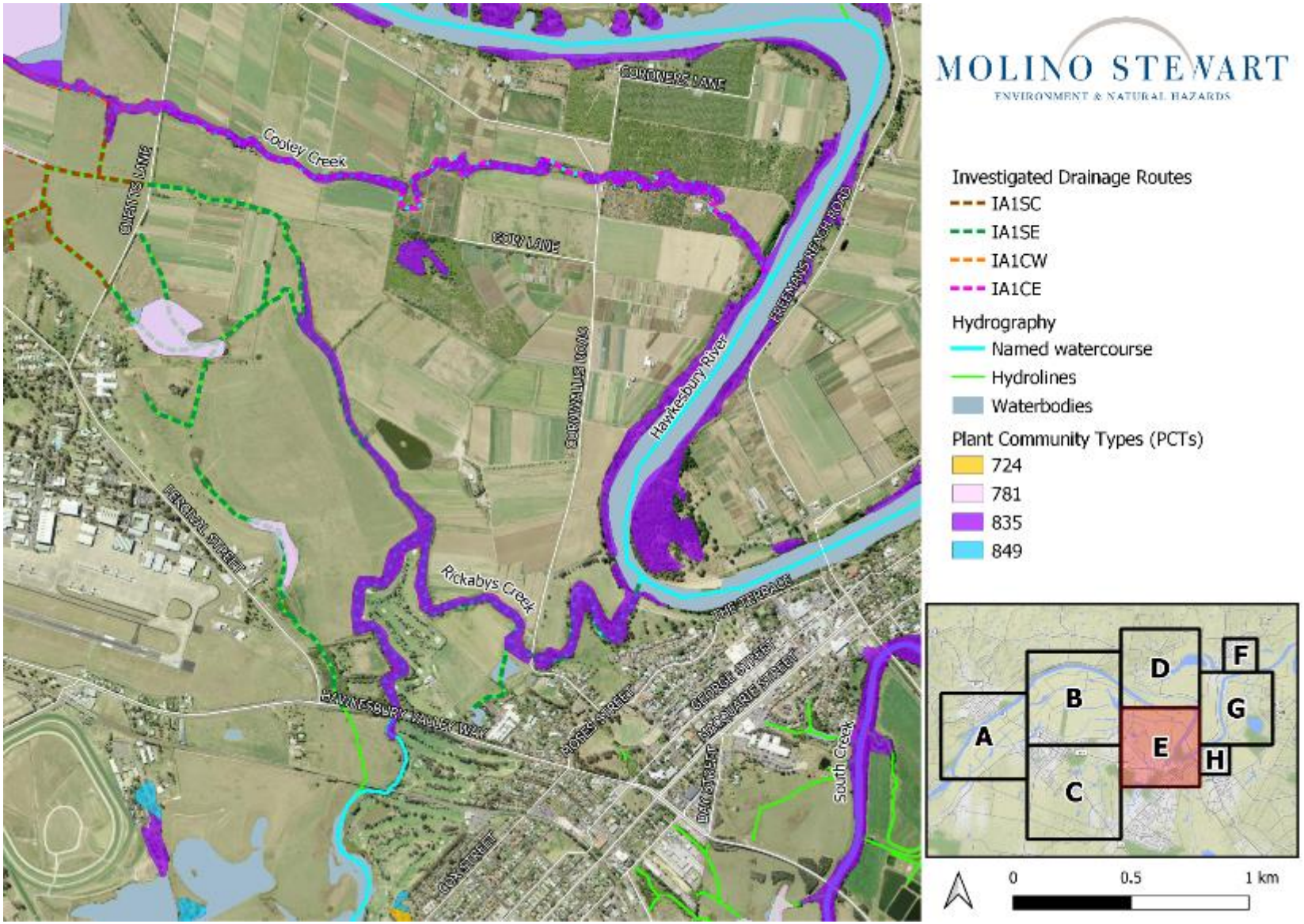

Figure 77: Plant Community Types (Extent E)

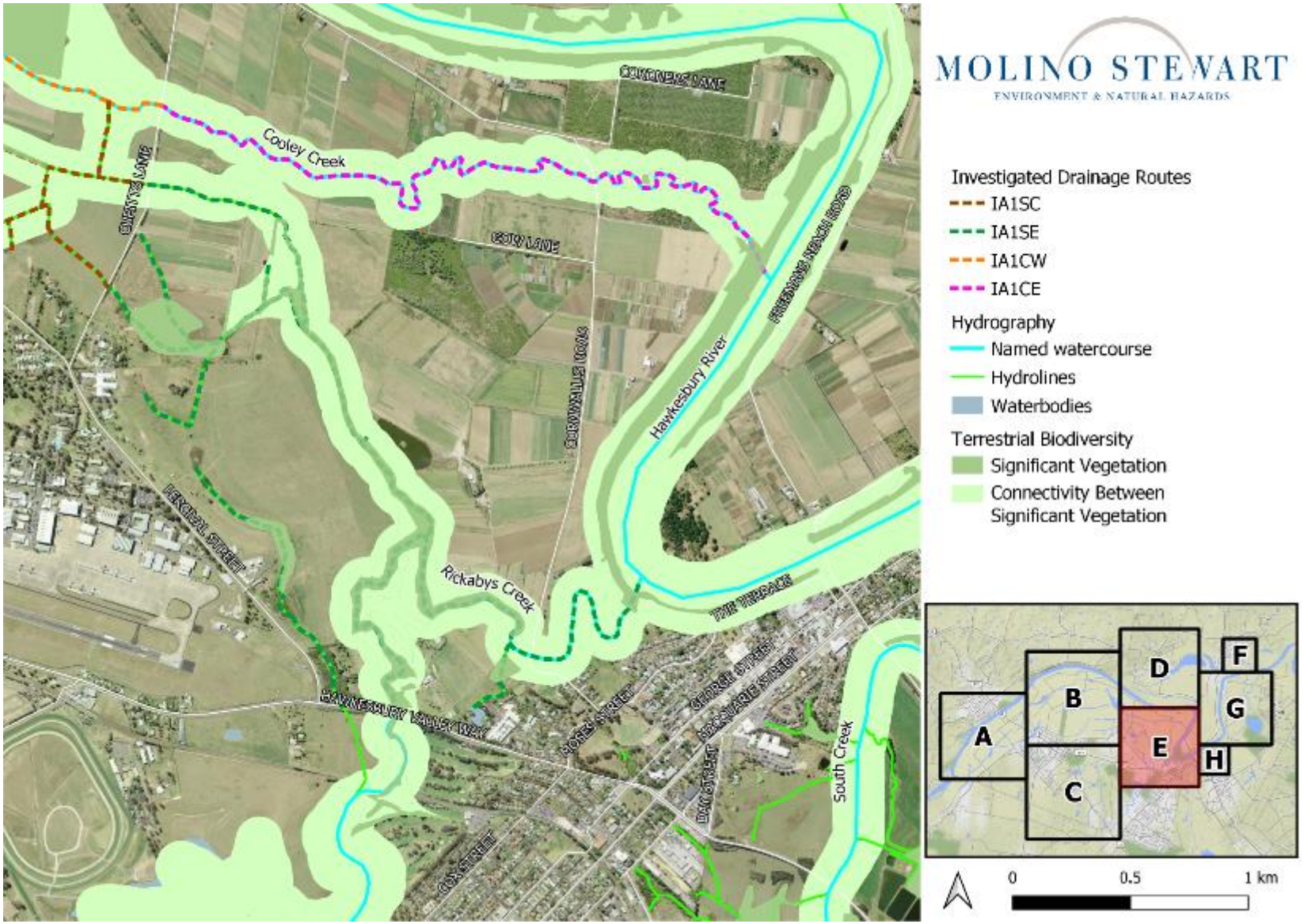

Figure 78: Terrestrial Biodiversity (Extent E)

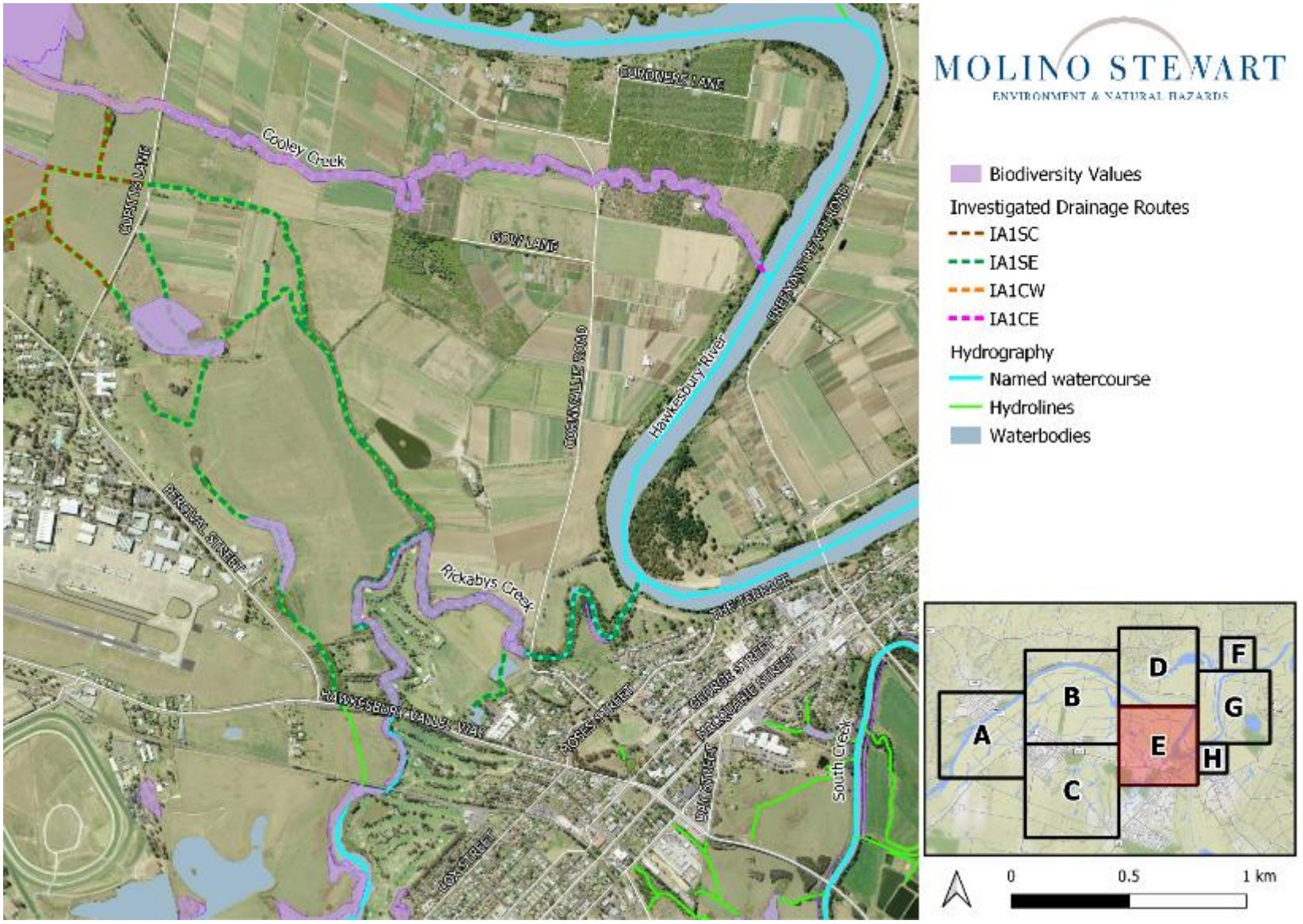

Figure 79: Biodiversity Values (Extent E)

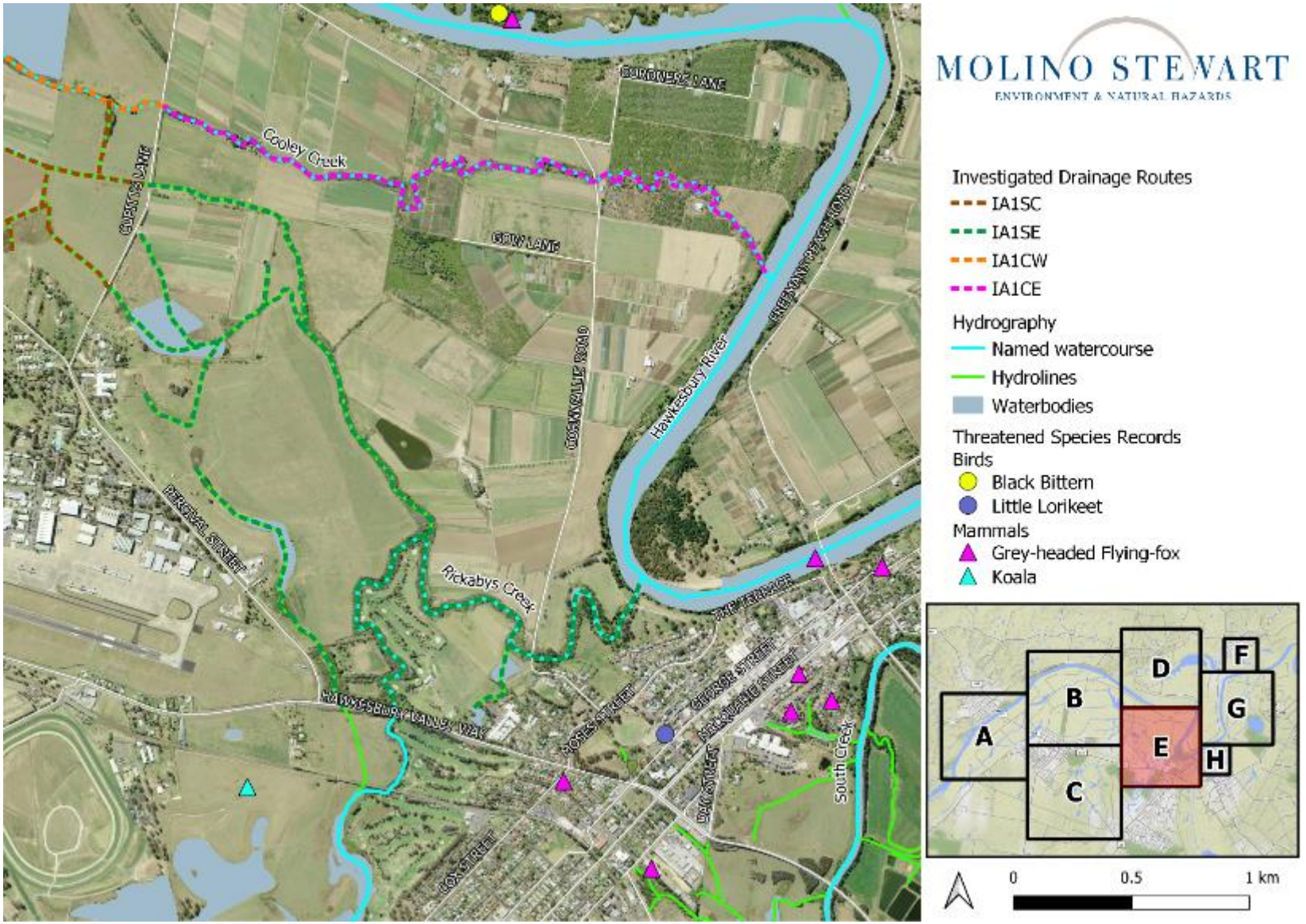

Figure 80: Threatened Species Records (Extent E)

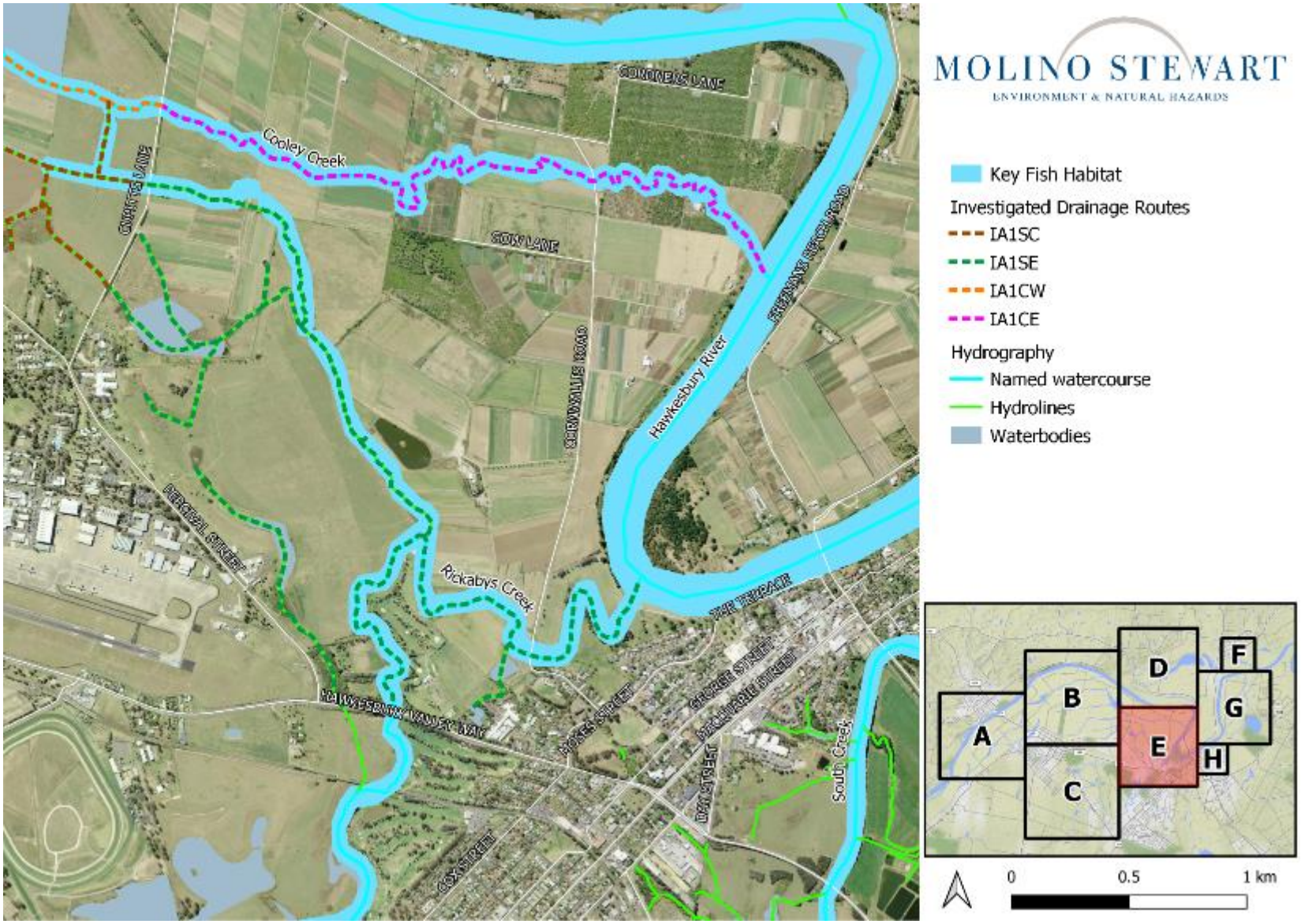

Figure 81: Key Fish Habitat (Extent E)

9| IA1 Central Drainage Route West

9.1 Drainage Issues

The IA1 Central drainage route west (IA1CW) follows Cooley Creek (Figure 82). The topographic maps shows Cooley Creek starting in a paddock midway between Onus Lane and Benson Lane but the drainage infrastructure actually starts closer to Onus Lane. It travels east through a series of ponds and lagoons before discharging into the very large Bakers Lagoon. Bakers Lagoon overflows into a continuation of Cooley Creek which continues east until it discharges into the Hawkesbury River. Downstream of Bakers Lagoon there is a connection between Cooley Creek and the Southern Drainage Route. There is also a short section of drain which drains into the northern end of Bakers Lagoon.

For the purposes of this report IA1CW finishes where Cooley Creek crosses Cupitts Lane.

The locations of each photograph referred to in the text can be found in Figure 83.

9.1.1 Field observations

There is a drain through a turf paddock east of Onus Lane which marks the beginning of this drainage line (Photo 171). The drain heads east and after a pipe crossing is full of grass (Photo 172) and no flow could be detected. When it reaches the property boundary there is a raised access road embankment on the neighbouring property and the drainage diverts north along the western side of this embankment (Photo 173). It passes under the embankment via a pipe (Photo 174) which is not sufficiently lower than the surrounding paddocks for them to completely drain.

It is from this point that the drainage line (Photo 175) is marked on maps as Cooley Creek and it flows through a series of three ponds before passing under Bensons Lane through a piped culvert (Photo 176). Water sat ponded in the drain downstream and many parts of the surrounding paddocks were below the water level of the drain (Photo 177). The drain passes under an access road culvert (Photo 178) with noticeable but shallow flow within the drain (Photo 179). It then discharges into another pond (Photo 180). The pond has a piped outlet and the water flows through a more defined drain which was flowing on the day (Photo 181). After going around a 90 degree bend the water appeared to be more ponded and there are several piped crossings for travelling irrigators (Photo 182). Despite what appeared to be a fall in the gradient of the channel there was no drop in the water level moving downstream (Photo 183 and Photo 184). The drainage from this area appears to be controlled by a small gap through the grass (Photo 185). This is constricting the flow and causing much of the ponding upstream.

However, downstream of this point the water in the channel was also ponded to a level similar to that of the surrounding paddocks (Photo 186). The drain passes under Sandstone Place via a large culvert (Photo 187) but flow into the culvert appeared to be inhibited by stones upstream of the headwall (Photo 188). The water level was the same on both sides of the culvert (Photo 189) and the downstream riprap did not appear to be restricting flow at this level (Photo 189).

Drainage continued through a shallow drain (Photo 190) which as ponded to the level of the small lagoon into which it drained (Photo 191). There is an access track across the lagoon (Photo 192) and there would appear to be two small pipes providing a hydraulic connection under it (Photo 193). There appeared to be some flow through the pipes, suggesting that the downstream part of the lagoon was slightly lower than that upstream.

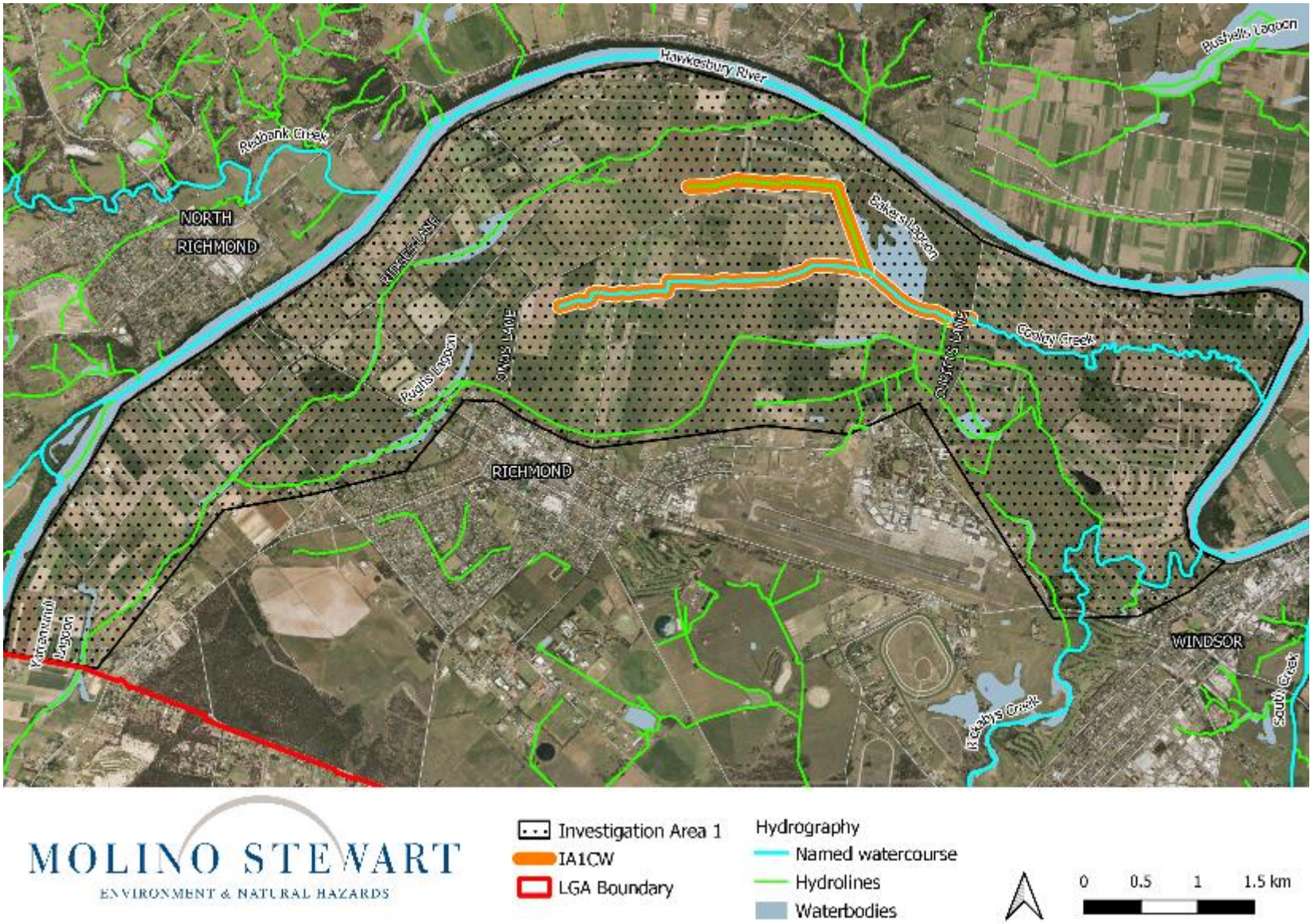

Figure 82: Investigation Area 1 Central Drainage Route West (IA1CW)

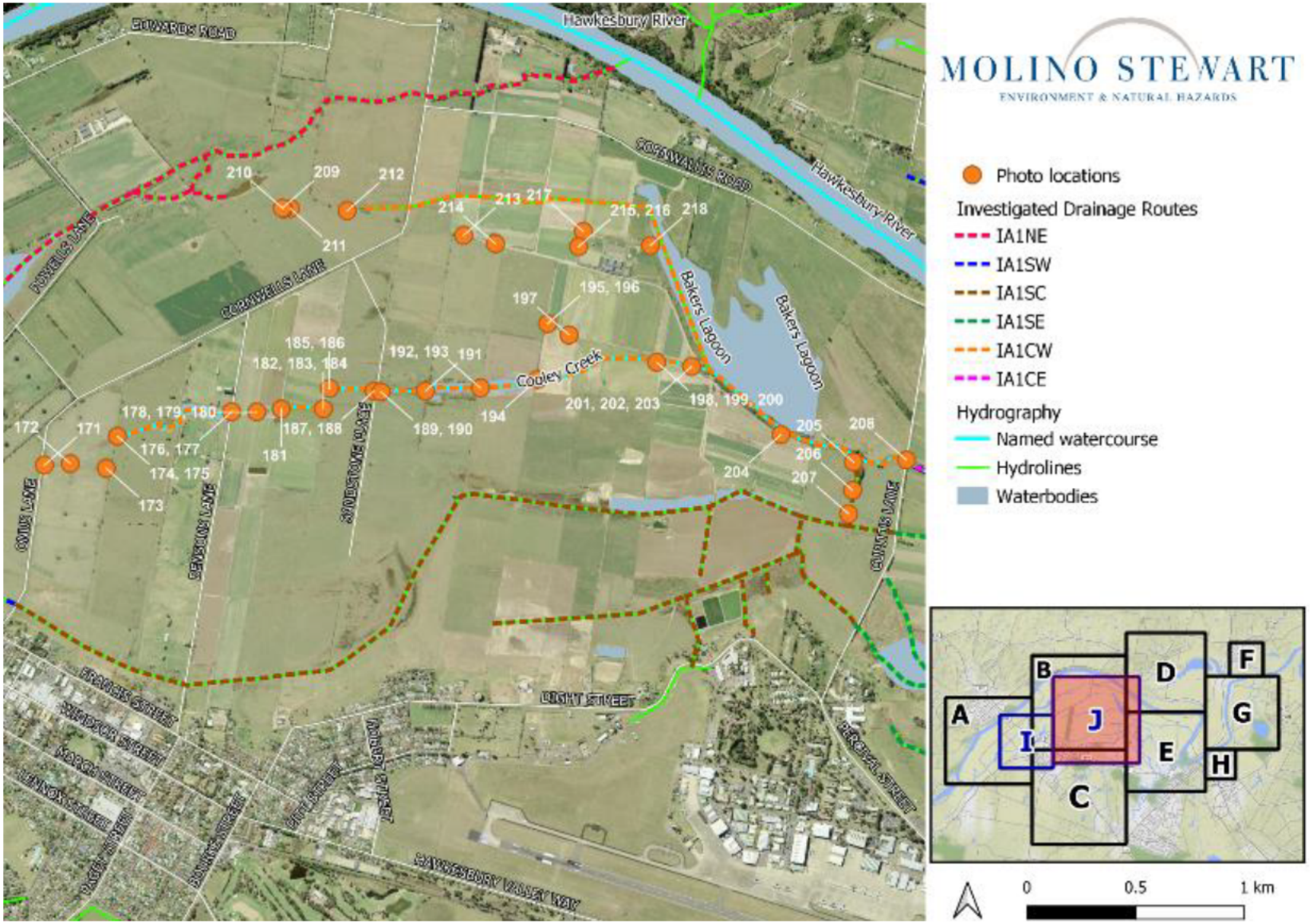

Figure 83: Photo locations for IA1CW

Photo 171

Photo 172

Photo 173

Photo 174

Photo 175

Photo 176

Photo 177

Photo 178

Photo 179

Photo 180

Photo 181

Photo 182

Photo 183

Photo 184

Photo 185

Photo 186

Photo 187

Photo 188

Photo 189

Photo 190

Photo 191

Photo 192

Photo 193

Downstream of the lagoon there is a channel which would appear to be hydraulically connected to the lagoon although it was not visible on the day (Photo 194). This channel had a poorly defined overflow point into a depression in a paddock (Photo 195) which appeared to be controlling the level in the channel and therefore the lagoon. The drainage path through this paddock was poorly defined and was essentially a broad area of saturated ground (Photo 196) which gradually becomes a more discernible drainage line within the landscape (Photo 197 and Photo 198). There then appeared to be noticeable fall and flow in the channel (Photo 199) although it was silted in places (Photo 200).

The channel flowed under a badly eroded culvert crossing (Photo 201) before entering Bakers Lagoon (Photo 202 and Photo 203). Some of the paddocks surrounding Bakers Lagoon were poorly drained because they sat below the surrounding paddocks or the banks of the lagoon (Photo 204).

The outlet to Bakers Lagoon is a wide, deep channel (Photo 205), the banks of which support native vegetation such as casuarinas and paperbarks but is also infested with weeds, particularly privet. There is a connection between Cooley Creek and the southern drainage network along this reach (Photo 206 and Photo 207). Moving downstream along Cooley Creek it becomes quite clogged with reeds (Photo 208) before it passes under a bridge at Cuppits Lane.

The short section of drain which enters the northern end of Bakers Lagoon begins upstream of a section of road embankment which is raised at least 1.5m above the floodplain (Photo 209). There is a pipe under this embankment (Photo 210) which discharges into a poorly defined depression through a paddock (Photo 211). This drains to some ponds (Photo 212) which overflow into a ponded channel which passes under an access road via pipe (Photo 213). This channel is obstructed by sediment in places (Photo 214). Water then makes its way through a paddock without there being a particularly well defined course (Photo 215) before ponding in the paddock and then passing under an access road through two separate culverts (Photo 216). The piped water from these culverts discharges into a low depression through a series of horse paddocks (Photo 217} which discharges directly into Bakers Lagoon (Photo 218).

Photo 194

Photo 195

Photo 196

Photo 197

Photo 198

Photo 199

Photo 200

Photo 201

Photo 202

Photo 203

Photo 204

Photo 205

Photo 206

Photo 208

Photo 209

Photo 210

Photo 211

Photo 212

Photo 213

Photo 214

Photo 215

Photo 216

Photo 217

Photo 218

9.1.2 Probable causes

It is principally the paddocks upstream of Bakers Lagoon which have significant drainage problems in IA1CW. There appear to be four contributing factors to the problem:

Firstly, the terrain is extremely flat so that there is very little natural fall. These areas will always drain slowly.

Secondly, turf farming is stripping the topsoil which is lowering the ground level in places to below the top of the drain so water does not drain towards the drain. In some places the drains are so shallow and so much top soil has been stripped that the paddocks are actually lower than the water level in the drains.

Thirdly, the length of the drains have been increased in places by diverting the drainage. The reduces the slope of what are very flat drains and significantly increases the time it takes to drain.

Finally, the water levels in the drains are higher than they should be in places because obstructions have been placed in the way or the drainage infrastructure has silted up. This has included access tracks with undersized culverts or culverts with inverts which are higher than the paddocks which they are draining. The latter could be caused by the paddock level being lowered by turf farming. Erosion from paddocks stripped of turf contributes silt to the drains and the very flat slopes on the drains means that it does not get transported through the drains but settles and fills the drain.

9.1.3 Possible solutions

The problems in this section are so extensive, complex and interrelated, it is difficult to identify a single solution or even a combination of measures which will significantly alleviate the problem.

Some paddocks will need to be regraded so that they fall towards the drains. In some places, particularly in the upper reaches, this might only be possible by filling the paddocks with imported soil.

Where possible, the channels should be straightened and right-angled deviations removed. Again, this may be a challenge in places where the flow path has been deviated around an obstruction which can no longer be moved.

Similarly, where the inverts of culverts under access tracks are lower than the level of upstream paddocks it may neither be practical to install a lower culvert under an already constructed road or lift the level of an entire upstream paddock.

Finally, even if some of the above measures can be undertaken, the erosion caused by turf farming will keep clogging the drains and turf farming will keep lowering parts of the landscape. It may be that on some parts of IA1CW turf farming is no longer sustainable because adequate drainage cannot be provided in prolonged wet periods.

A detailed survey and drainage improvement concept design would be needed to find a means of improving drainage upstream of Bakers Lagoon, if it is at all possible.

Possible solutions for IA1CW are shown in Figure 84.

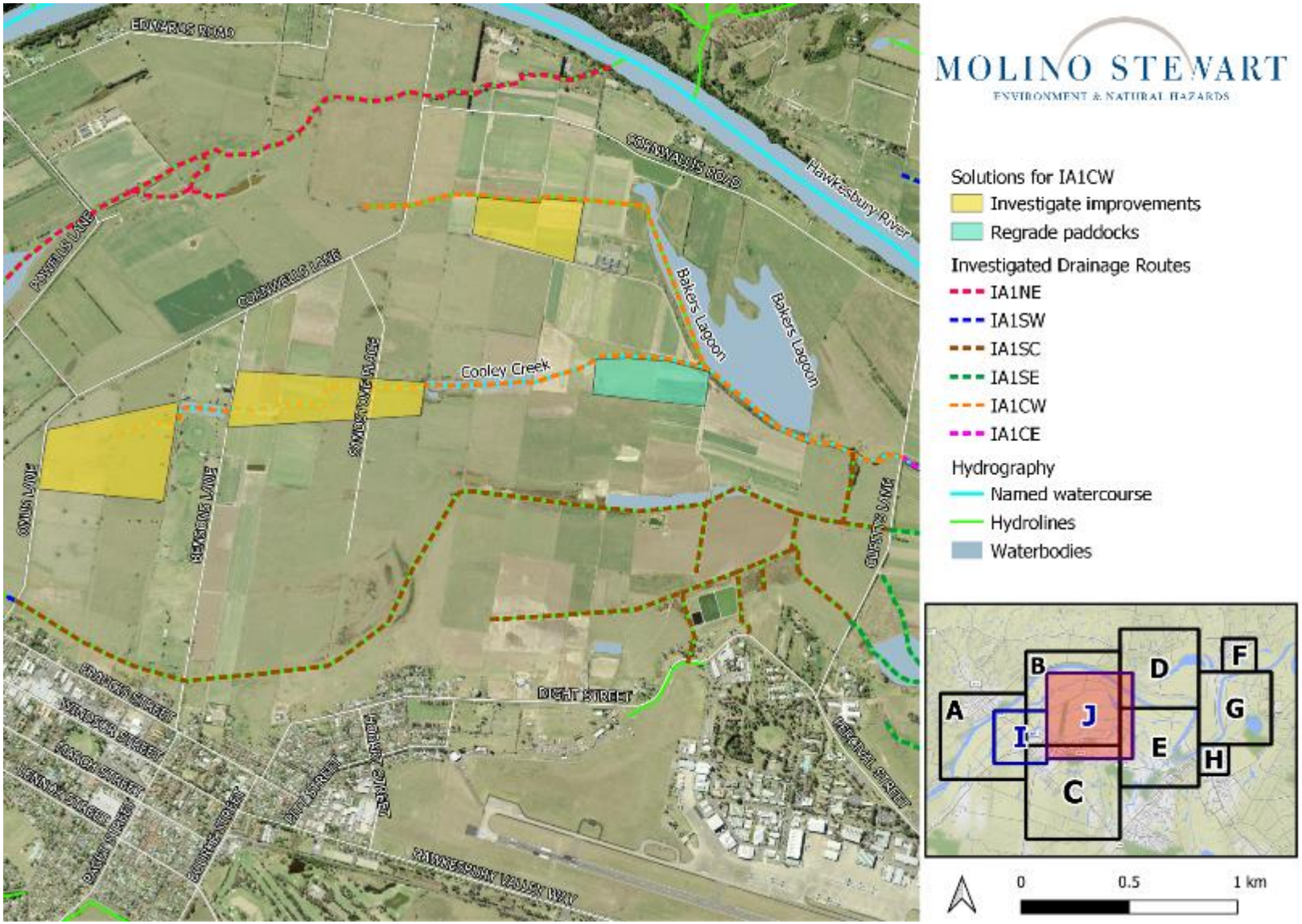

Figure 84: Solutions for IA1CW

9.2 Environmental Constraints

a) Zoning

The Cooley Creek Drainage Route predominantly traverses land zoned as RU2 – Rural Landscape with segments crossing into the zones RE1 – Public Recreation and C2 – Environmental Conservation (Figure 57). Immediately to the west of Bensons Lane, Cooley Creek crosses land zoned as RE1, with Hawkesbury City Soccer Club and Owen Earle Oval on either side. Further downstream Cooley Creek enters and exits Bakers Lagoon which is zoned as C2.

Maintenance of existing drainage channels, including clearing of the channel, is permitted without consent for zones RU2, RE1 and C2, while reinstating or rectifying drainage lines requires development consent. Since the causes behind the drainage issues are complex and interconnected, further investigation into the solutions will be required. However, seeing as the drainage channels in the area have been modified slowly over the years by the surrounding agriculture practices and changes to ground levels are likely to be needed, most of the actions for this drainage channel are likely to require development approvals.

Any further suggested solutions would be assessed based on the criteria detailed in section 3.1 of this report.

b) Contamination

Environment Protection Authority (EPA) contaminated land records of notices for the Hawkesbury LGA are shown in Figure 1. Notified contaminated sites on or near the Hawkesbury Floodplain are shown in Figure 4.

There is a single EPA contaminated land record of notice in the vicinity of the Cooley Creek Drainage Route at 532 Cornwallis Road, Cornwallis, however regulation under the *Contaminated Land Management Act 1997* (CLM Act) is not required for this site (Figure 85). This location is downstream of where the drainage problems occur in IA1CW.

Parts of IA1CW are within the Bakers Lagoon PFAS Management Area for Richmond RAAF Base (Figure 86). At this point no works are suggested within the management area, but if this were to change those works would require consultation with the Department of Defence prior to commencing any works.

c) Acid Sulphate Soils

IA1CW is surrounded by Class 3 and 4 land on the Acid Sulphate Soils Map (Figure 59). The majority of the drainage channel is surrounding by Class 4 land with the exception of a continuous tract of Class 3 land which extends from approximately 300m west of Bensons Lane up to and including Bakers Lagoon along the length of Cooley Creek.

According to HLEP 2012 Part 6.1, development consent is required in Class 3 land for works more than 1 m below the natural ground surface or by which the watertable is likely to be lowered more than 1 m below the natural ground surface. For Class 4 land development consent is required where the works are more than 2m below the natural ground surface or are likely to lower the watertable by more than 2m below the natural ground surface. Development consent cannot be granted unless an ASS management plan has been prepared for the proposed works in accordance with the ASS Manual.

Much of the area which is identified as requiring drainage improvements is the Class 3 land. The land is so flat in this area that it is unlikely that any works would be more than 1m below the land surface.

d) Heritage

i) HLEP Heritage Items

IA1CW traverses two General Heritage Items; item I23 west of Cornwells Lane and I21 south of, and overlapping, Bakers Lagoon (Figure 60). The details of these heritage items are shown in Table 7(*HLEP 2012* Schedule 5).

Table 7: HLEP Heritage Items (IA1C)

Item Number	Item Name	Address	Significance
I23	Hawkesbury Agricultural College River Farm	173 Cornwells Lane, Richmond Lowlands	Local
I21	"Clarendon" (servants' quarters)	96 Dight Street, Richmond	Local

ii) AHIMS Heritage Items

An AHIMS Basic Search of constraints extent J returned 5 Aboriginal Sites. The closest to IA1CW drainage lines is to the south along Bensons Lane (Figure 61). The others are in Richmond township and the RAAF base. However, the exact location and nature of Aboriginal sites is not known from a Basic Search. Therefore, for any works on IA1CW, a Basic Search of the specific works extent should be conducted to confirm whether any Aboriginal Sites are nearby. If an initial basic search returns any Aboriginal Sites, an AHIMS Extensive Search is required.

e) Wetlands and Coastal Areas

Bakers Lagoon is the single wetland identified on the HLEP Wetlands Map (Figure 62) along the Cooley Creek Drainage Route, into which Cooley Creek enters in the west and a smaller drainage channel enters in the north and from which Cooley Creek exits in the east.

Before development consent can be granted for any works conducted within the extent of Bakers Lagoon the provisions set out in Part 6.5 (3) and (4) of the HLEP and sections 2.7 and 2.8 R&H SEPP must be satisfied. These provisions are quoted in sections 3.5 and 3.6of this report. Works within Bakers Lagoon should not be necessary.

IA1CW does not intersect any coastal environmental areas or coastal use areas.

f) Ecology

i) PCT Mapping

There are two PCTs mapped along the Cooley Creek Drainage Route; these are PCT 781 and PCT 835 (Figure 63). PCT 781 is mapped for the waterbody between Sandstone Place and Bakers Lagoon, and for Bakers Lagoon itself. PCT 835 is mapped along the majority of Cooley Creek from its connection to Bakers Lagoon to the outlet into the Hawkesbury River. The areas requiring improved drainage would not impact on any of these PCTs.

ii) Terrestrial Biodiversity

Figure 64 shows Bakers Lagoon and the wetland mapped on Cooley Creek west of Bakers Lagoon as significant vegetation. It also shows the paddock west of the Cooley Creek wetland and the ponds on Cooley Creek next to the football fields as significant vegetation. Any drainage works within these areas would need to take this into account.

Connectivity Between Significant Vegetation is only shown around Bakers Lagoon and the section of Cooley Creek flowing east out of Bakers Lagoon,

iii) Biodiversity Values

The vast majority of the drainage lines in IA1CW are mapped as 'Biodiversity Value' on the DPE Biodiversity Values Map, with only exceptions being the drainage channel to the northeast of Bakers

Lagoon and an approximate 200 m segment of Cooley Creek east of Bensons Lane (Figure 65). As most of the area west of Bakers Lagoon was cleared of anything other than ground cover and that was mostly turf grasses, it is not clear why it has been mapped as having Biodiversity Value. As this is the area where much of the drainage improvement work needs to take place, it will be necessary to demonstrate the works will not have impacts on biodiversity values.

i) Threatened Species Records

The Grey-headed Flying-fox and the Barking Owl are the only threatened species which have been seen within map extent J which covers IA1CW and these have mostly been sighted in the urban areas south of the drainage line (Figure 66).

ii) Key Fish Habitat

Only that section of Cooley Creek east of Bakers Lagoon is mapped as key fish habitat along IA1CW (Figure 67). This is not an area where drainage improvement works are recommended.

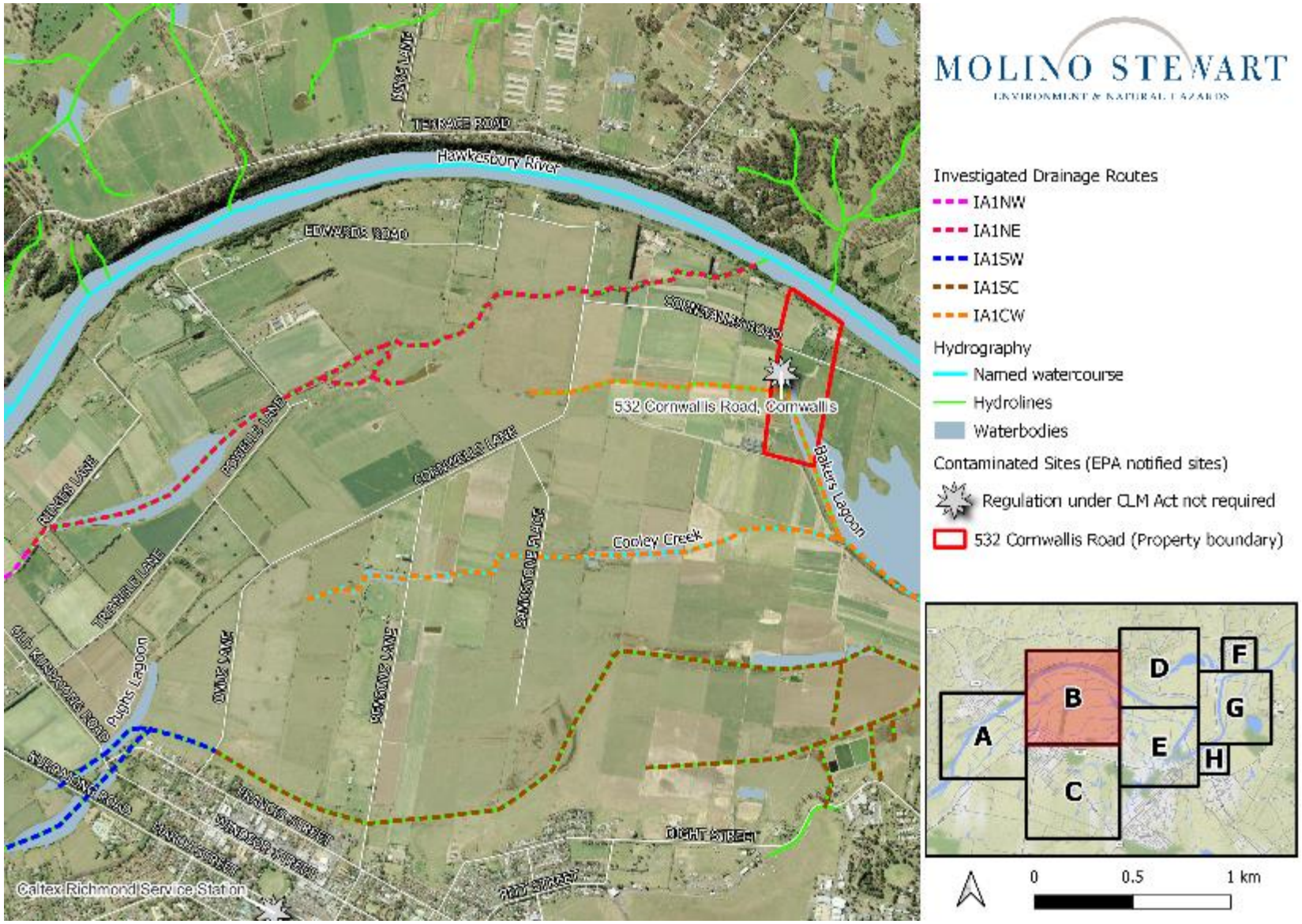

Figure 85: Contaminated Lands (Extent B)

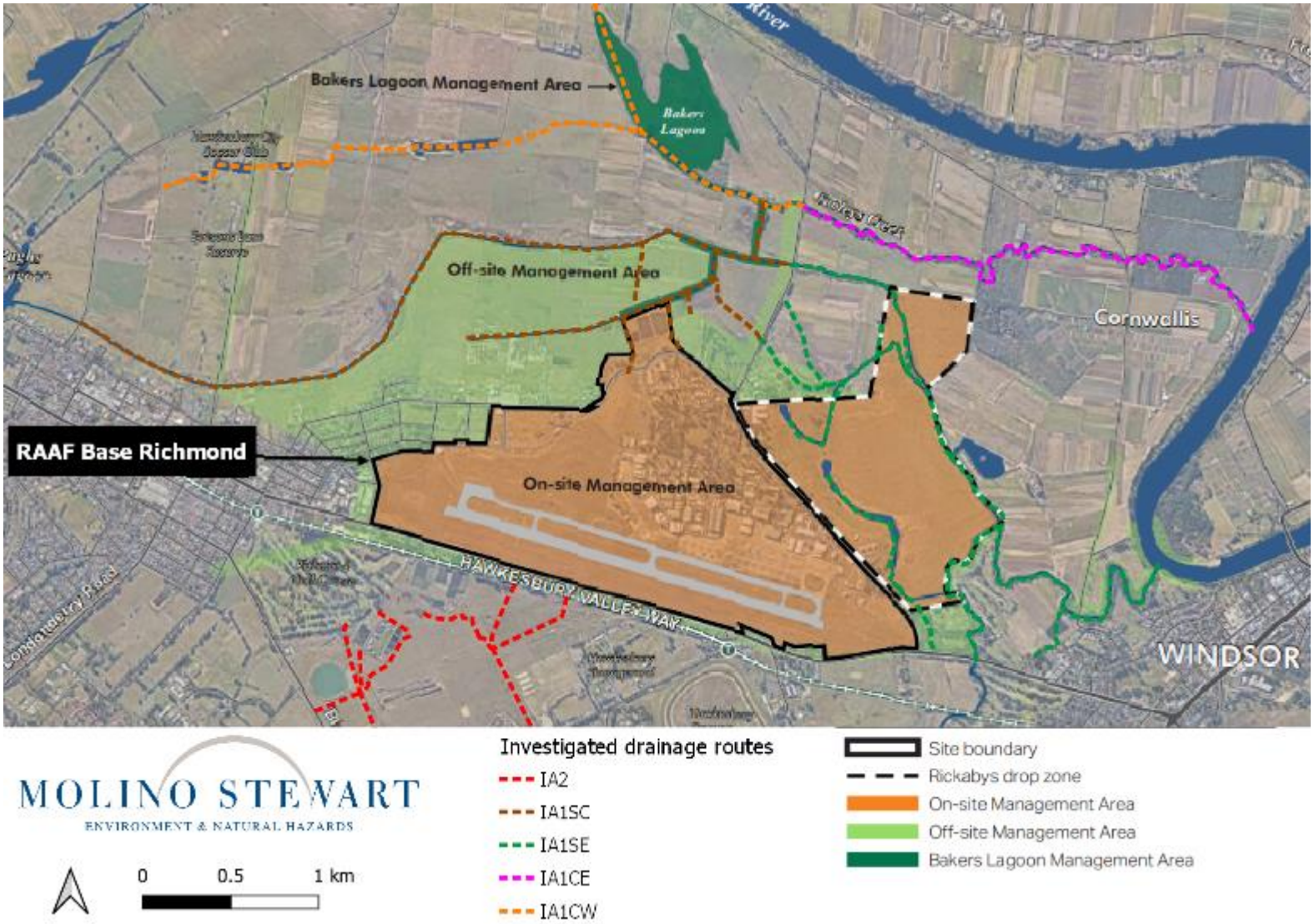

Figure 86: PFAS Management Areas

10| IA1 Central Drainage Route East

10.1 Drainage Issues

The IA1 Central drainage route east (IA1CE) follows Cooley Creek from Cupitts Lane to where it enters the Hawkesbury River (Figure 87). The photograph locations referred to in the text can be found in Figure 88.

10.1.1 Field observations

Downstream of Cupitts Lane the channel becomes narrower and the channel and its banks are heavily vegetated (Photo 219) much of which is native vegetation (Photo 220). There is an increase the amount of flood debris deposited in the creek (Photo 221) along with silt which is inhibiting flow. In places the channel is quite clear and predominantly lined with native vegetation although there are occasional large debris items in the creek (Photo 222). There is a crossing of the creek which is piped (Photo 223) and 150m downstream of this there is sediment blocking the drain (Photo 224). Further downstream there is evidence of the bank slumping into the drain (Photo 225). It then passes under an access track through two pipes (Photo 226) downstream of which the water is ponded in the creek (Photo 227).

Downstream of here the banks of the creek were so overgrown with Small-leaf Privet, honey locust and other weeds (Photo 228) it was not possible to get close enough to the creek to observe its condition until 400m upstream of Cornwallis Road. At this location the channel is choked with weeds (Photo 229) and littered with debris (Photo 230). This continues under the bridge at Cornwallis Road (Photo 231) and further downstream (Photo 232). As the creek gets closer to the river is becomes deeper and wider and there are several large trees which have been felled and have fallen into the creek. These logs, trees growing in the channel and vines growing over it all has caught a lot of debris (Photo 233 and Photo 234 and Photo 235). Near the river there was no flow in the creek whatsoever nor any ponded water (Photo 236 and Photo 237).

10.1.2 Probable Causes

While large items of flood debris, silt and weeds were choking the channel through this reach of Cooley Creek, none of this appears to have had a detrimental impact on surrounding farmland due to slow drainage. Its location at the end of the Cooley Creek.

10.1.3 Possible Solutions

There would be undoubted environmental benefits of removing the weeds, silt and flood debris from this reach of Cooley Creek. This would also increase the rate of flow along this section of creek and drain the floodplain more rapidly. However, there was no evidence that prolonged elevation of water levels in this area, after the peak river level had dropped, had caused significant damage. Therefore, it is not recommended that works to clean out this section of the channel be undertaken if drainage improvement is the sole objective.

10.2 Environmental Constraints

As no drainage improvement works are suggested for IA1CE there is no discussion regarding the environmental constraints. However, they are mapped in Figure 71 through to Figure 81.

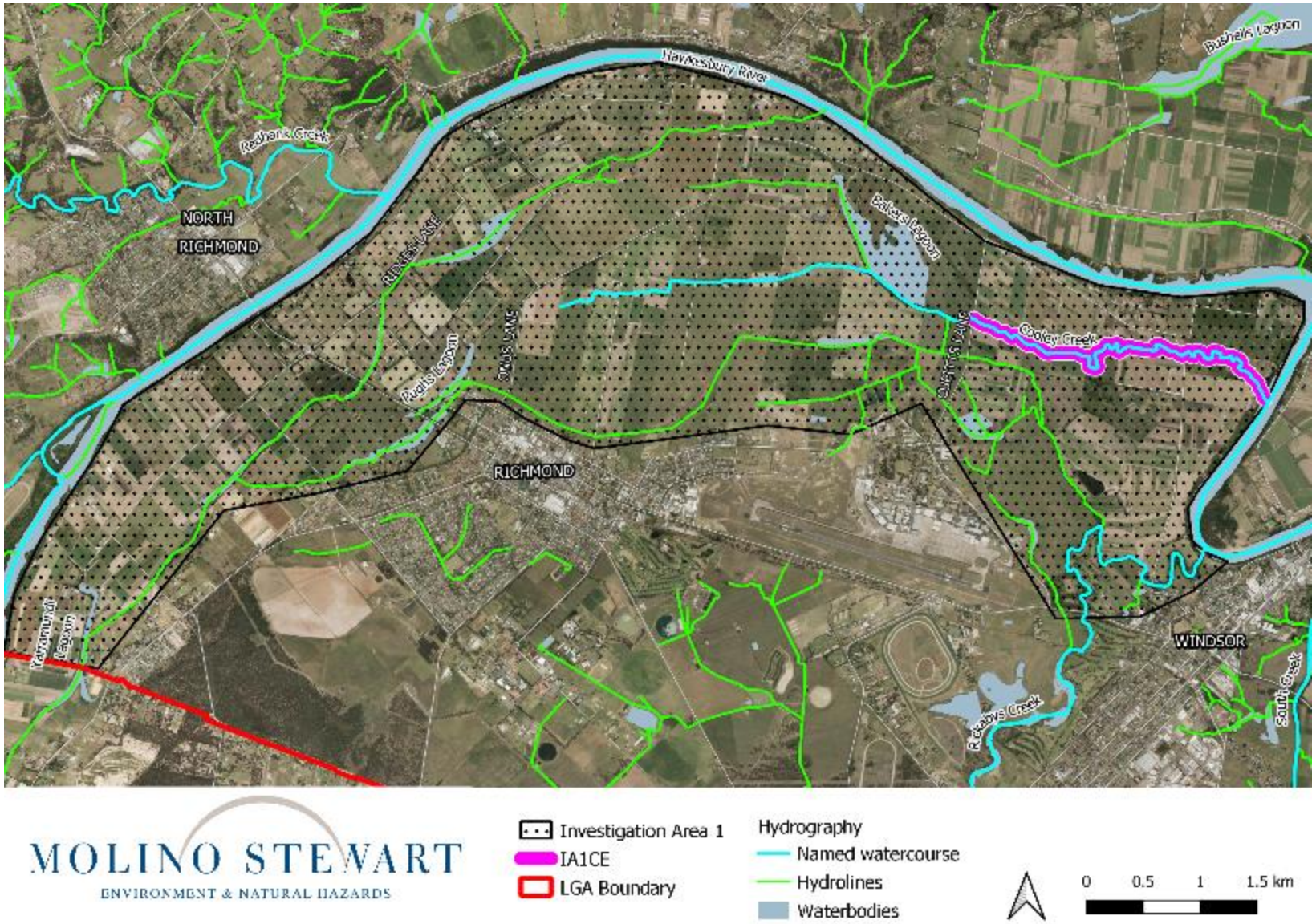

Figure 87: Investigation Area 1 Central Drainage Route East (IA1CE)

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- Photo locations

Investigated Drainage Routes
- IA1SC
- IA1SE
- IA1CW
- IA1CE

Hydrography
- Named watercourse
- Hydrolines
- Waterbodies

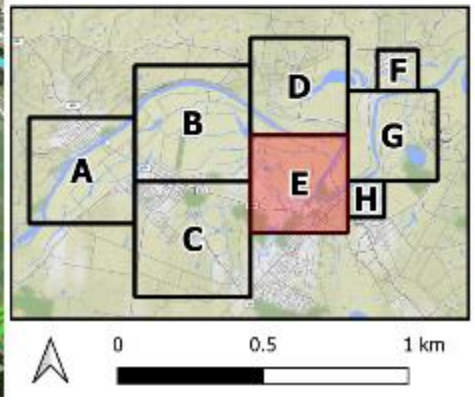

Photo 219

Photo 220

Photo 221

Photo 222

Photo 223

Photo 224

Photo 225

Photo 226

Photo 227

Photo 228

Photo 229

Photo 230

Photo 231

Photo 232

Photo 233

Photo 234