

**Fairwinds Resort Community
Schooner Cove
Existing Servicing Inventory Report
October, 2009**

Introduction

As part of the process of preparation of the Neighbourhood Plans for Fairwinds Resort Community in Nanoose Bay, this report has been prepared to provide an inventory and comments on existing site servicing for the planning area within the Schooner Cove Urban Containment Boundary identified in the Regional District of Nanaimo's Regional Growth Strategy.

The Schooner Cove Neighbourhood plan area is 46,338 m² (11.45 acres) located on the water front on the Nanoose Peninsula at the southern edge of the Cove east of Dolphin Drive. Originally developed as a small resort marina it presently includes development consisting of a 360-slip marina and office, a cafe, a liquor store, a convenience shopping store, the (now closed) former Schooner Cove Hotel and Laughing Gull Pub, gravel and paved parking lots, tennis courts, and undeveloped multi-family building sites. Adjacent development includes the 49-unit Schooner House strata apartment building, and developed single family homes on fee-simple lots along Outrigger Road.

This existing servicing inventory report provides background for a separate infrastructure and servicing report to be prepared for the proposed Neighbourhood Plan (NP). It should be noted in reading this report to refer to Drawings 9919-051-119, -121, -123, and -125, enclosed at the rear of this report.

Reference should also be made to the Fairwinds Resort Community, The Lakes District, Existing Servicing Inventory Report, and to Drawings No. 9919-017-124, -126, -127, and -128, enclosed at the rear of that report.

Water Servicing

1. Supply

The existing supply of water to the marina at Schooner Cove, Schooner House apartments and adjacent lands on Outrigger Road is under the previous Nanoose Local Service Area (LSA) portion of the now integrated Regional District of Nanaimo (RDN) Nanoose Peninsula LSA water system. Originally supplied from Enos Lake under the Eagle Heights private water utility system, source supply was changed to groundwater from wells in the vicinity of Northwest Bay Road and Claudet Road when the RDN took over operation of the system in approximately 1977.

Following completion of subdivision servicing all water system supply, storage, pumping, pressure reducing valves, fire hydrants and flushouts, air valves, distribution

pipng and services to the meter box location, and any other water system appurtenances are turned over to the RDN. The RDN will carry out operation and maintenance under a Local Service Area arrangement. Water supply for future redevelopment and development of these properties is as detailed in the Lakes District Existing Servicing Inventory Report, 2009.

2. Existing Service Connection

The existing water distribution mains are shown on Drawing No. 9919-051-119. These are in varying pressure zones, to suit the undulating terrain and provide appropriate operating pressures throughout the system. The pressure zones are designated by the static pressure head in metres.

As shown on drawing -119, the Schooner Cove property is in the 65 m HGL pressure zone, served from the three system reservoirs named Beachcomber, Eagle Heights and Dolphin Beach, all with common top water levels of 65 m elevation. These reservoirs provide peak demand storage and fire demand storage of the Schooner Cove site.

The existing water service enters the site off the 150 mm diameter main on Dolphin Drive, just south of the existing marina access, as shown on drawing – 119. At the 10 m elevation of the site, the water service provides a static pressure of just under 78 psi. This reduces with flow in the service connection under demand, and in conjunction with other usage throughout the 65 m HGL pressure zone. The fire hydrant shown on the same drawing at the north side of the intersection of Dolphin Drive / Outrigger Rd./ Redden Rd. provides fire protection ability for the existing structures and site. Fire protection is provided by the Nanoose Volunteer Fire Department, from its firehall on Nanoose Road, near the Red Gap commercial area.

3. Considerations for Future (Re) Development of Schooner Cove Neighbourhood

RDN operation and maintenance under a Local Service Area arrangement, can be extended to strata properties in which the RDN has registered rights-of-way to allow necessary access. This should be considered during redevelopment planning, as it allows metering for individual units (a common effective method for reducing water demand), permits smaller looped mains to be installed, provides improved water quality through looping, and simplifies maintenance considerations by removing much of the infrastructure from development or strata responsibility. This ensures health and safety responsibility under the Health Act is designated to an authority experienced, qualified, and insured to carry out the task.

Twin pressure reducing valves on Andover Road reduce the 125 m pressure zone to 85 m HGL Pressure Zone 1A, to provide suitable service to the low-lying areas of Fairwinds. Secondary pressure reducing valves on Dolphin Drive near Sherbrooke Road provide an additional feed to this zone, to maintain pressures at peak demand periods. Due to the proximity of this improved pressure zone, it is recommended that future service

improvements be achieved through obtaining new connections off this zone. The 20 m higher head provides a static pressure of just over 100 psi at the 10 m site elevation.

As detailed in The Lakes District, Existing Servicing Inventory Report, 2009, the future building of one extra water storage reservoir of 660 m³ adjacent to the existing two Fairwinds Reservoirs, or a partial contribution to the RDN construction of a new and larger Arbutus Reservoir, should meet the anticipated RDN storage requirement to build-out development level in Fairwinds, including both the Schooner Cove and Lakes District Neighbourhoods. As the existing storage is estimated to support 1,050 units of total development within Fairwinds (includes existing Fairwinds development and initial additional demands from The Lakes District and Schooner Cove (re) development), the third reservoir should therefore be planned to be built as the 1,050 unit level is approached.

Sanitary Sewer System

1. Existing Sanitary Sewer System

Drawing 9919-051-121 shows the existing constructed sanitary sewage collection system schematic. This shows the locations of gravity sanitary sewer mains, forcemains, and pump stations. The recently installed gravity sewer extension on Outrigger Road has been designed to meet present needs, and has a capacity for over 500 total units, which is sufficient to meet the anticipated increased flow from adjacent development and redevelopment land.

Currently, all sanitary sewage flows from within the entire area of the Schooner Cove Neighbourhood at Fairwinds (except for single family residences on Outrigger Road which have individual on-site systems) are directed to the Nanoose Water Pollution Control Centre (NWPCC) at the west end of Dolphin Lake. For background information on the RDN system, NWPCC capacities, and upgrading requirements to accommodate increased development, refer to the Lakes District, Existing Servicing Inventory Report.

2. Off-Site Sanitary Collection System

Schooner Cove Neighbourhood flows connect to the existing adjacent trunk sewer on Dolphin Drive, from where mains and pumping stations are already suitably sized for delivery to the NWPCC. Sizing review of the existing pump stations would be required to confirm any upgrading needs. The two stations on Dolphin Drive and Schooner Cove Drive have been designed as triplex pump stations. Their construction has included most of the controls and sizing to suit the ultimate three pumps, but only two pumps are currently installed in each station. The third pump was anticipated for (re) development at the Schooner Cove neighbourhood at a level exceeding the 250 Igpm capacity of the two pumps, and for full connection of the existing, unsewered areas along Dolphin Drive with incorporation into the Fairwinds Sanitary Sewer Local Service Area (LSA) .

Storm Water Management

Drawing 9919-051-123 shows the existing constructed storm drainage system schematic. Existing storm drainage flows on the Schooner Cove Neighbourhood are mostly overland, with direct discharge to the adjacent ocean at Schooner Cove. Building and roof drainage similarly discharges to the ocean, close to the existing building. The stormwater facilities for Fairwinds, Schooner Cove Neighbourhood are owned and maintained by the Ministry of Transportation and Infrastructure (MoTI). For the rural sections of Dolphin Drive and Outrigger Road, which have been constructed with gravel shoulders, crown and crossfall on the road surface directs drainage to the adjacent open ditches where constructed, which have corrugated steel pipe (CSP) culverts at drainage crossings. These also outlet to the adjacent ocean. Outrigger Road is a narrowly constructed rural style road, without ditches. It is a short cul-de-sac, built along and fairly close to the high point of a localized knoll of land. Roadway drainage spills onto adjacent low-side properties, from where it flows overland to the Strait of Georgia at the road's eastern half and to Schooner Cove at the road's western half.

Piped storm sewers and manholes, to normal municipal standards as applicable in the City of Nanaimo and Town of Parksville, as approved by MoTI, are installed at the interface of the Schooner Cove Neighbourhood to connect the existing Fairwinds subdivision development. Rainwater from these roadways, sidewalks, boulevards, and lot areas sloping towards roadways is collected in the roadway gutter, from where it drains to roadway catch basins, connected to the piped storm sewer mains.

Drawing -123 shows the direction of the discharges from existing Fairwinds development and existing roadworks adjacent to the Schooner Cove Neighbourhood. This includes piped drainage outlets from Redden Road and Sherbrooke Road, where the storm sewers from the curb and gutter style development meets the ditch system of the older Dolphin Drive. Ditch flows on Dolphin Drive lead to a culvert beneath the road and drainage outlet to Schooner Cove to the west, and a road crossing to Dolphin Bay Road to the east. The Dolphin Bay Road small cul-de-sac drainage combines with the drainage off Dolphin Drive into an old culvert and ditch system that flows through adjacent properties developed prior to Fairwinds, and discharges across the beach to the Strait of Georgia.

Road Network

1. Background

Fairwinds, Schooner Cove Neighbourhood, is accessed off Highway 19 via Northwest Bay Road from two trunk roads, Powder Point Road which becomes Fairwinds Drive, and Stewart Road which becomes Dolphin Drive with access and looping through the existing development site. In accordance with Ministry of Transportation (MoTI) requirements for network roads to the development, Fairwinds Drive was completed in conjunction with the first phase of Fairwinds, to provide a looped trunk road. Future

MoTI requirements include the completion of Schooner Cove Drive as the second trunk road through the site, as development proceeds.

Schooner Cove has very good access on the network roads at present. This will further improve with The Lakes District development in the future, as Schooner Cove Drive is completed to Powder Point Road, and other connector roads are built. The Schooner Cove Neighbourhood existing road network is shown on drawing No. 9919-051-125.

2. Road Standards

Existing new network roads through Fairwinds have been constructed to MoTI approved standards. The rural sections of Fairwinds Drive have been constructed with gravel shoulders, and open ditches, with corrugated steel pipe (CSP) culverts at drainage crossings. All other roadways are built with piped storm sewers and manholes, concrete curb and gutter road drainage control with catch basins, to normal municipal standards as specifically approved by MoTI for the Fairwinds development project. Manholes located within the travelled portion of roadways are located outside of the normal vehicle wheel-path, where feasible.

Dolphin Drive through Fairwinds was constructed to MOTI's earlier standards. The right-of-way width is 20 m, with an additional 2.5 m each side now required for new development in adverse terrain to achieve an ultimate 25 m right-of-way. The MoTI District Development Office presently requires this as a 2.5 m wide no-build covenant adjacent to Dolphin Drive along the frontage, in lieu of a full dedication of additional width. This would allow widening of the roadway, its shoulder, or parallel pathway or utilities over the private property in the future, if needed by the MoTI.

For Dolphin Drive, earlier standards also permitted grades in excess of the normal 8-9% maximum for network roads in several sections. Vertical and horizontal curves are tight. Roadway, intersecting roads and driveway sight distances are insufficient in many locations. Drainage facilities are marginal, and some outlets are not controlled by rights-of-way where they cross private property. Some limited sections of Dolphin Drive have been upgraded by the Ministry, but these have been customized to allow construction of the best affordable compromise, and to work within the existing road right-of-way.

For background information on the future extension of Schooner Cove Drive refer to The Lakes District, Existing Servicing Inventory Report.

Sidewalks

Fairwinds existing development has concrete sidewalks in place on most of the subdivision road rights-of-way, except for smaller cul-de-sacs with limited traffic. Refer to The Lakes District, Existing Servicing Inventory Report, for additional background information on sidewalks.

Existing concrete sidewalks on Redden Road and Sherbrooke Road terminate after rounding the roadway curb return on to Dolphin Drive. There are no other sidewalks on Dolphin Drive, or in the vicinity of Schooner Cove. The gravel roadway shoulder along Dolphin Drive is narrow, and although used by some residents as a walkway, it is considered dangerous due to inadequate width in conjunction with a narrow road surface and areas of limited driver sight-distance. Along the Schooner Cove ocean frontage of Dolphin Drive, and the opposite side by the old quarry in this area, wide shoulders provide safe trail use over a limited roadway length. Re-development may provide an opportunity to increase the length of a safe sidewalk or trail system beyond this area.

Power Distribution

B.C. Hydro provides power distribution to Schooner Cove. Three-phase power is available off generally overhead pole lines on Fairwinds Drive, Dolphin Drive, and the existing constructed portion of Schooner Cove Drive. Existing three-phase BC Hydro services to the hotel and marina site are provided from both Dolphin Drive and Outrigger Road.

The initially overhead power distribution on Fairwinds Drive, from Dolphin Drive near the Fairwinds Golf Course clubhouse to just west of Bonnington Drive has been relocated to underground facilities at Fairwinds cost. This has proceeded in sections, as the adjacent areas were serviced for local development, for aesthetic and improved view considerations.

Except for the small portion of development fronting Dolphin Drive, including Foxrun Place, all other existing Fairwinds development has been serviced with underground BC Hydro power distribution. All other existing distribution in the Fairwinds development is underground, from low-profile above ground transformers and below-grade service boxes and junction boxes. Where underground service is available, all development is required to build with underground service into the building, to eliminate any further aerial wires.

As re-development of Schooner Cove Neighbourhood is planned, it should be decided whether to continue conversion of existing overhead three phase sections to underground service. Regardless of these considerations, it is assumed that underground service will be provided to all new units, to eliminate any further overhead distribution and service wiring. As part of redevelopment planning, confirmation of capacity should be obtained from the utility company.

Gas Service

Schooner Cove is provided with gas service from the Terasen Gas underground distribution system on Outrigger Road. The normal procedure for gas servicing extension is provision and installation of suitable buried carrier pipes by Fairwinds during site servicing, at intersections and other locations agreed with Terasen Gas. Terasen then proceeds to install the distribution and service piping on a customer demand basis, as actual building proceeds on the development lands.

All facilities are underground, except for piping, the meter, and shutoff at the buildings' exteriors.

Telephone and Cablevision Service

Schooner Cove is provided with telephone, cablevision, and internet service by Telus and Shaw Cablesystems, and cablevision by Shaw Cablesystems. These services are provided off Outrigger Road, laid below ground generally in the same trench as the three-phase BC Hydro routing to the existing hotel building, fed from overhead cabling on poles on the adjacent roadway.

Future development would connect to the existing underground systems on Redden and Sherbrooke Roads at Dolphin Drive. Alternatively, the utility companies may require service from a new drop from a suitable pole, with pilasters installed for protection as the cabling runs down the pole into new underground conduits. As part of redevelopment planning, confirmation of capacity should be obtained from the utility companies.

Streetlighting

Refer to the The Lakes District, Existing Servicing Inventory Report, for complete background information on the streetlighting systems installed throughout the rest of Fairwinds.

At Schooner Cove, the only existing streetlighting is provided at the west side of both the Redden and Sherbrooke Road intersections with Dolphin Drive, which were installed with the adjacent Fairwinds subdivisions. It is assumed that system extension to provide full suitable coverage will occur with redevelopment of the Schooner Cove Neighbourhood.

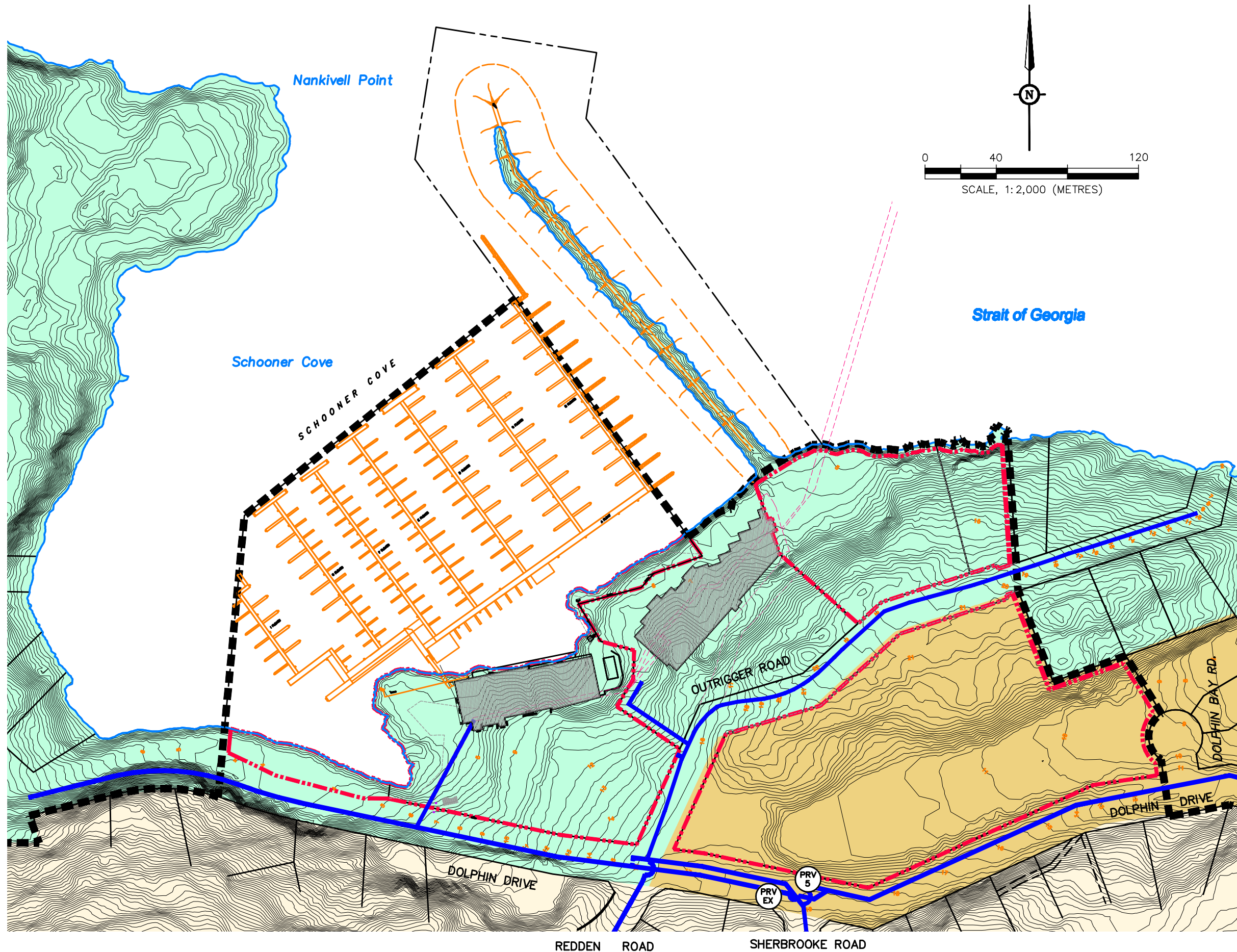
Various parking area and building exterior private lighting exists on the hotel and marina area, fed from the building service panels. It is assumed that most of this will be replaced with redevelopment, but any plans for retention should be reviewed in conjunction with the lighting scheme and illumination levels for the new development and adjacent road streetlighting.

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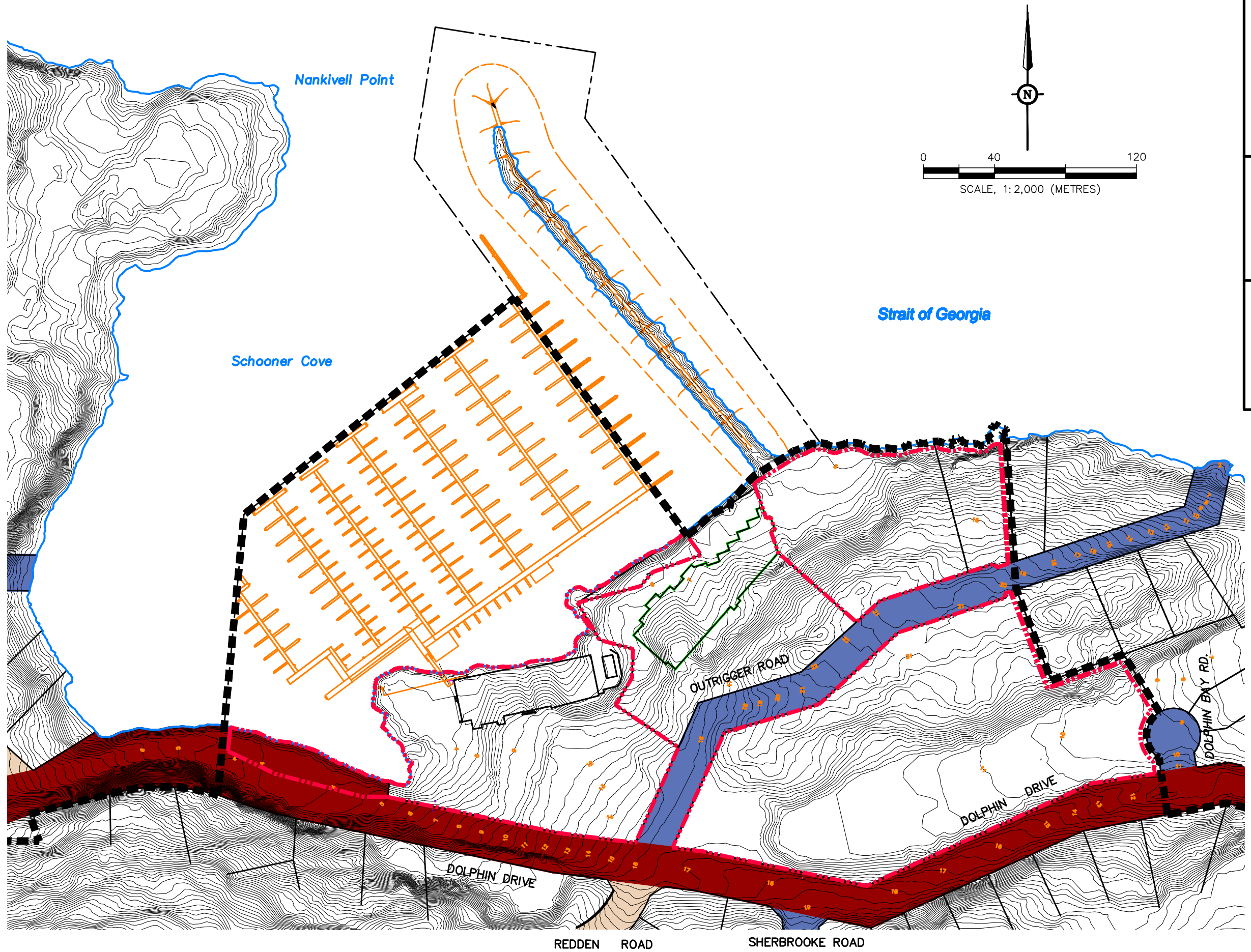


FAIRWINDS
 SCHOONER COVE
 NEIGHBOURHOOD PLAN
 EXISTING WATER
 DISTRIBUTION
 SYSTEM SCHEMATIC

LEGEND

	FAIRWINDS URBAN CONTAINMENT BOUNDARY
	SCHOONER COVE NEIGHBOURHOOD BOUNDARY
	WATER DISTRIBUTION MAIN
	PRV = PRESSURE REDUCING VALVE
	PRESSURE ZONE STATIC HEAD, 65m HYDRAULIC GRADE LINE
	PRESSURE ZONE STATIC HEAD, 85m HYDRAULIC GRADE LINE
	PRESSURE ZONE STATIC HEAD, 125m HYDRAULIC GRADE LINE

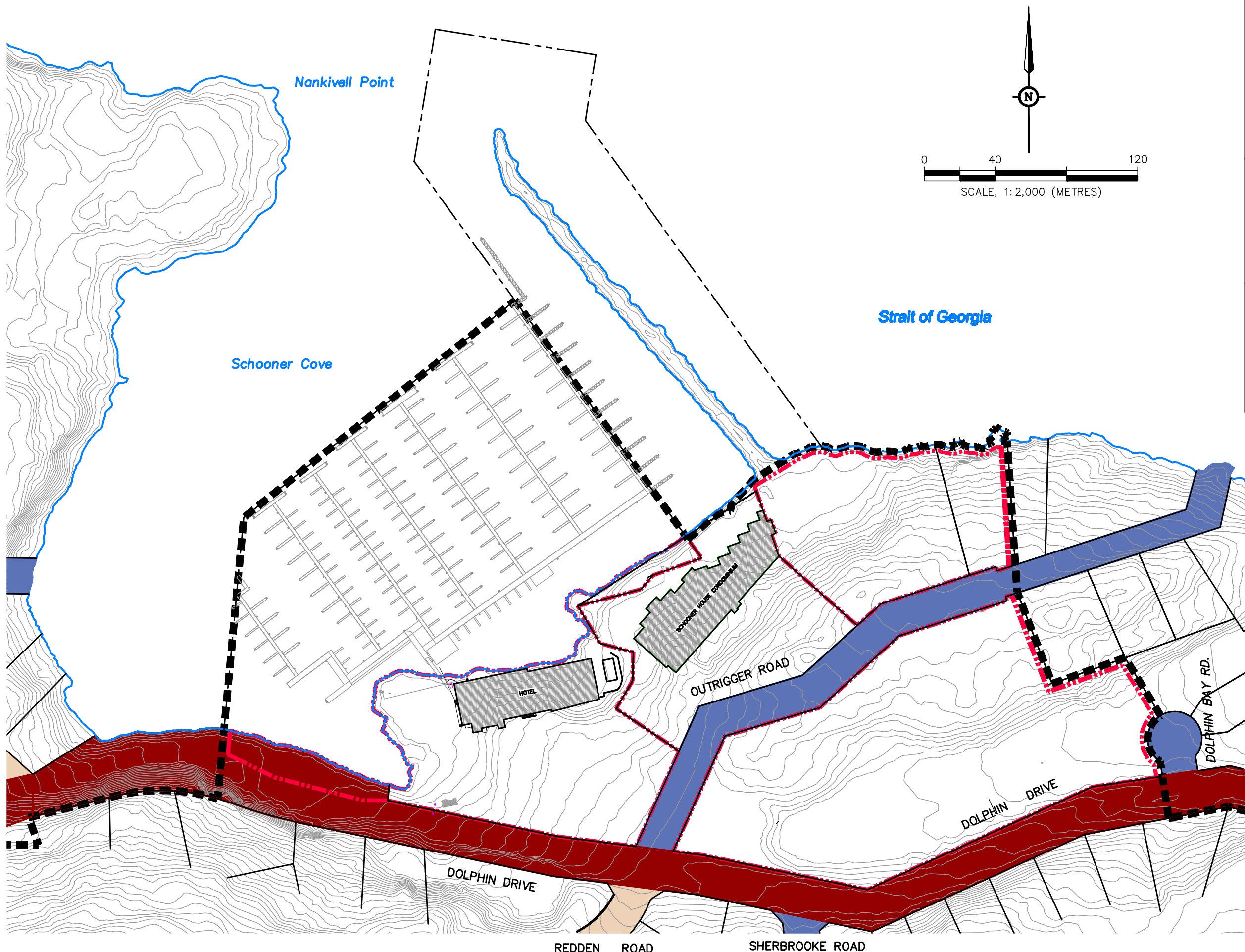
REDDEN ROAD SHERBROOKE ROAD



FAIRWINDS
 SCHOONER COVE
 NEIGHBOUR PLAN
 EXISTING ROAD
 NETWORK

LEGEND

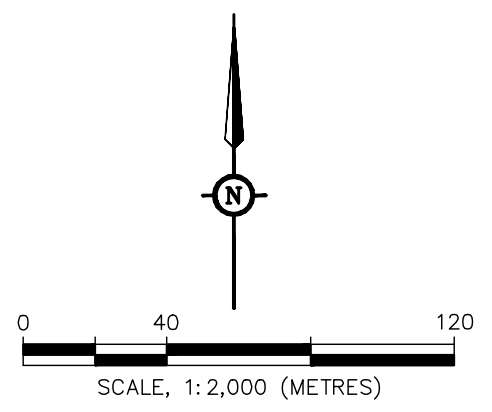
	FAIRWINDS URBAN CONTAINMENT BOUNDARY
	SCHOONER COVE NEIGHBOURHOOD BOUNDARY
	COLLECTOR
	MINOR COLLECTOR
	LOCAL RESIDENTIAL STREET



SCHOONER COVE
 NEIGHBOUR PLAN
 EXISTING ROAD
 NETWORK






LEGEND

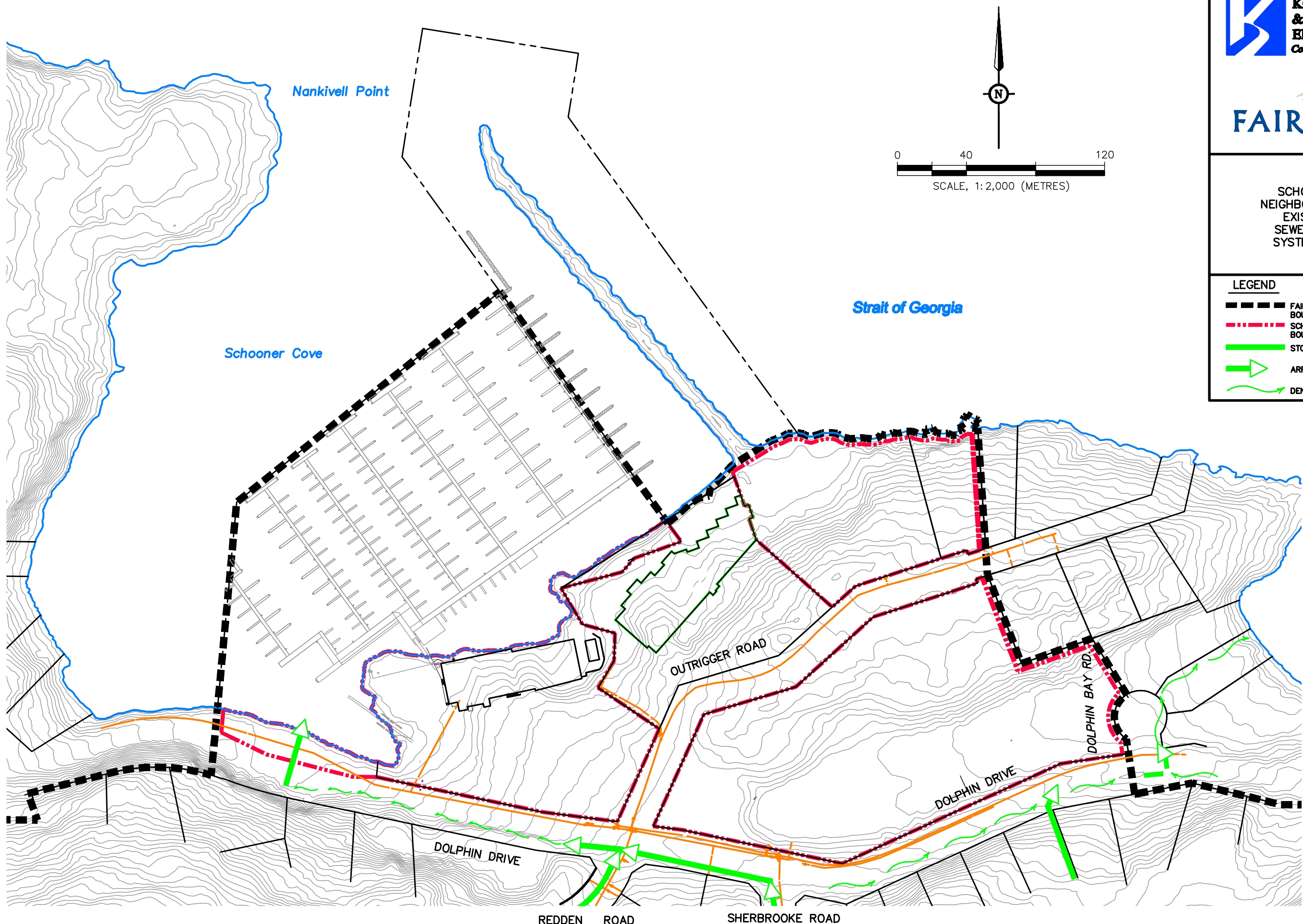
- FAIRWINDS URBAN CONTAINMENT BOUNDARY
- - - SCHOONER COVE NEIGHBOURHOOD BOUNDARY
- █ COLLECTOR
- █ MINOR COLLECTOR
- █ LOCAL RESIDENTIAL STREET



SCHOONER COVE
 NEIGHBOURHOOD PLAN
 EXISTING STORM
 SEWER COLLECTION
 SYSTEM SCHEMATIC

LEGEND

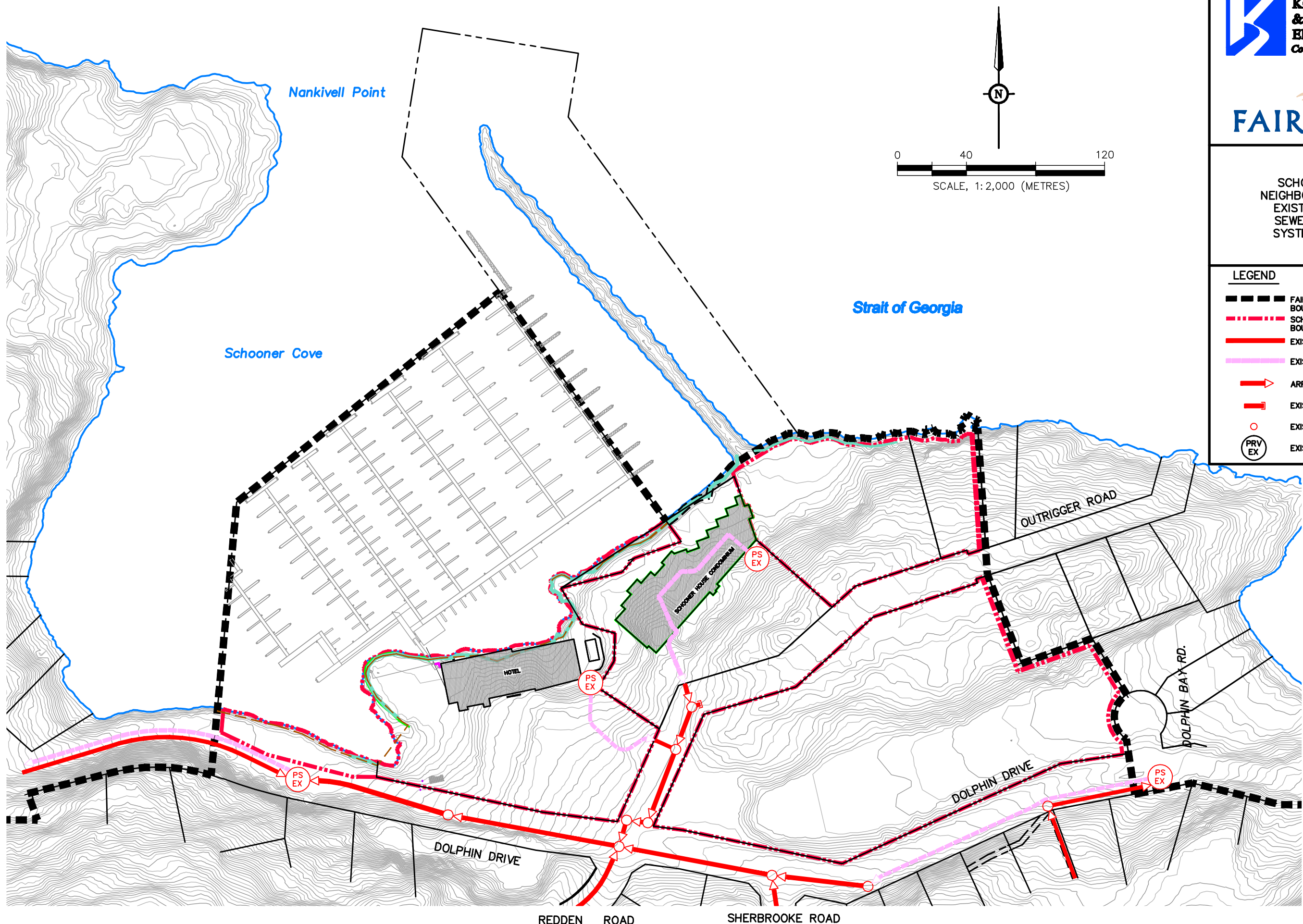
-  FAIRWINDS URBAN CONTAINMENT BOUNDARY
-  SCHOONER COVE NEIGHBOURHOOD BOUNDARY
-  STORM DRAIN
-  ARROW DENOTES FLOW DIRECTION
-  DENOTES DITCH FLOW DIRECTION

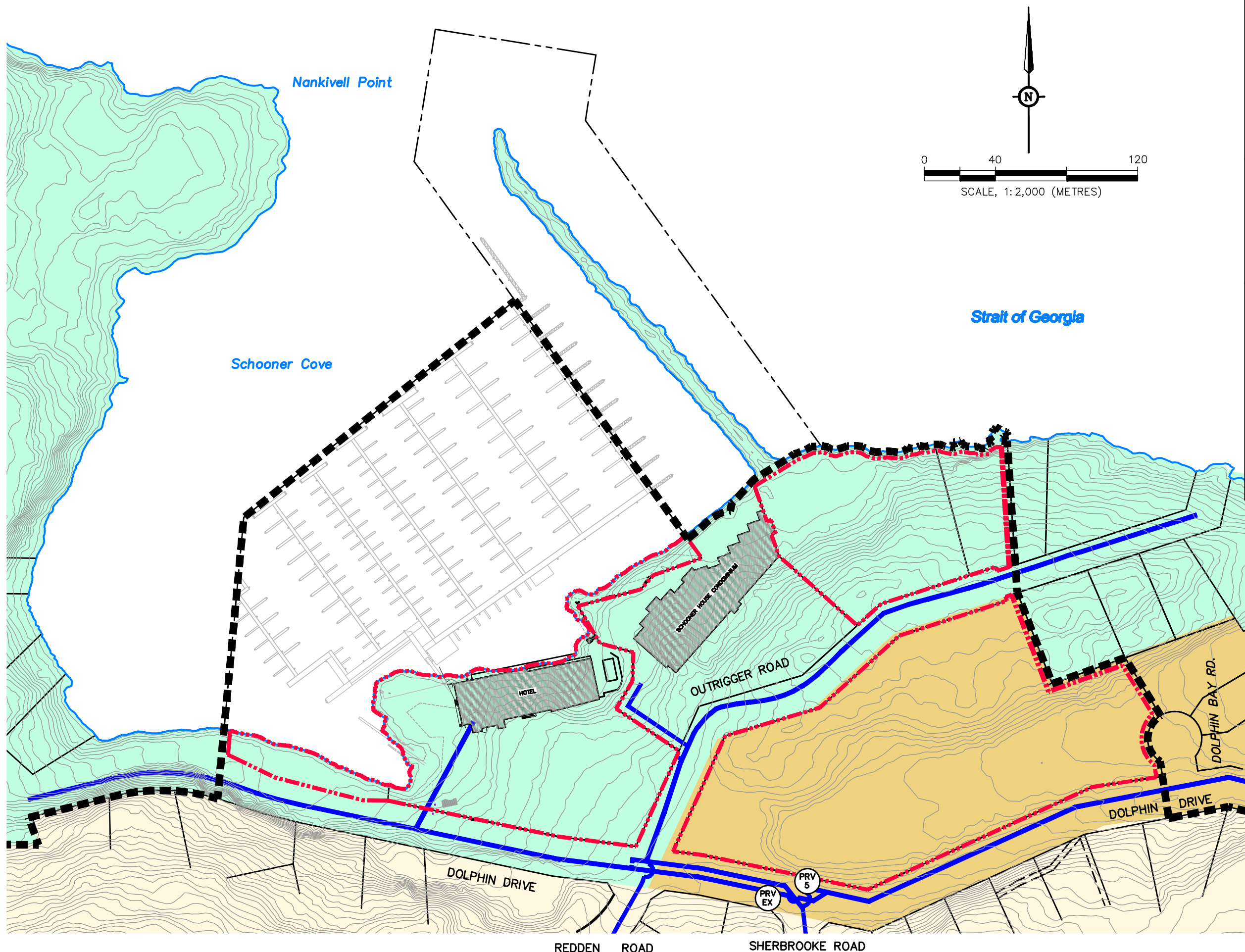


**SCHOONER COVE NEIGHBOURHOOD PLAN
 EXISTING SANITARY SEWER COLLECTION SYSTEM SCHEMATIC**

LEGEND

- FAIRWINDS URBAN CONTAINMENT BOUNDARY
- - - - - SCHOONER COVE NEIGHBOURHOOD BOUNDARY
- EXISTING GRAVITY SANITARY SEWER
- EXISTING PUMPED SANITARY SEWER
- ➔ ARROW DENOTES FLOW DIRECTION
- EXISTING SANITARY CAPPED STUB
- EXISTING SANITARY MANHOLE
- PRV EX EXISTING SANITARY PUMP STATION





SCHOONER COVE
 NEIGHBOURHOOD PLAN
 EXISTING WATER
 DISTRIBUTION
 SYSTEM SCHEMATIC

LEGEND

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	PRESSURE ZONE STATIC HEAD, 65m HYDRAULIC GRADE LINE
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	PRESSURE ZONE STATIC HEAD 125m HYDRAULIC GRADE LINE

