

# NOVA REDE INTEGRADA DE TRANSPORTE COLETIVO METROPOLITANO

## MUNICÍPIO DE PALHOÇA



# Apresentação Pública e Debate

1) Abertura – 15 min

2) Apresentações – 45 min

3) Debate – 90 min

# O TRANSPORTE COLETIVO E O USUÁRIO

## *Uma visão integral*



OBSERVATÓRIO  
DA MOBILIDADE URBANA  
**UFSC**



**UNIVERSIDADE FEDERAL  
DE SANTA CATARINA**

# O QUE É Transporte Coletivo?



Foto: BKT Rio



# O QUE É Transporte Coletivo

Viagens **PROGRAMADAS** e **REGULARES**

Aberto ao uso de **QUALQUER PESSOA**

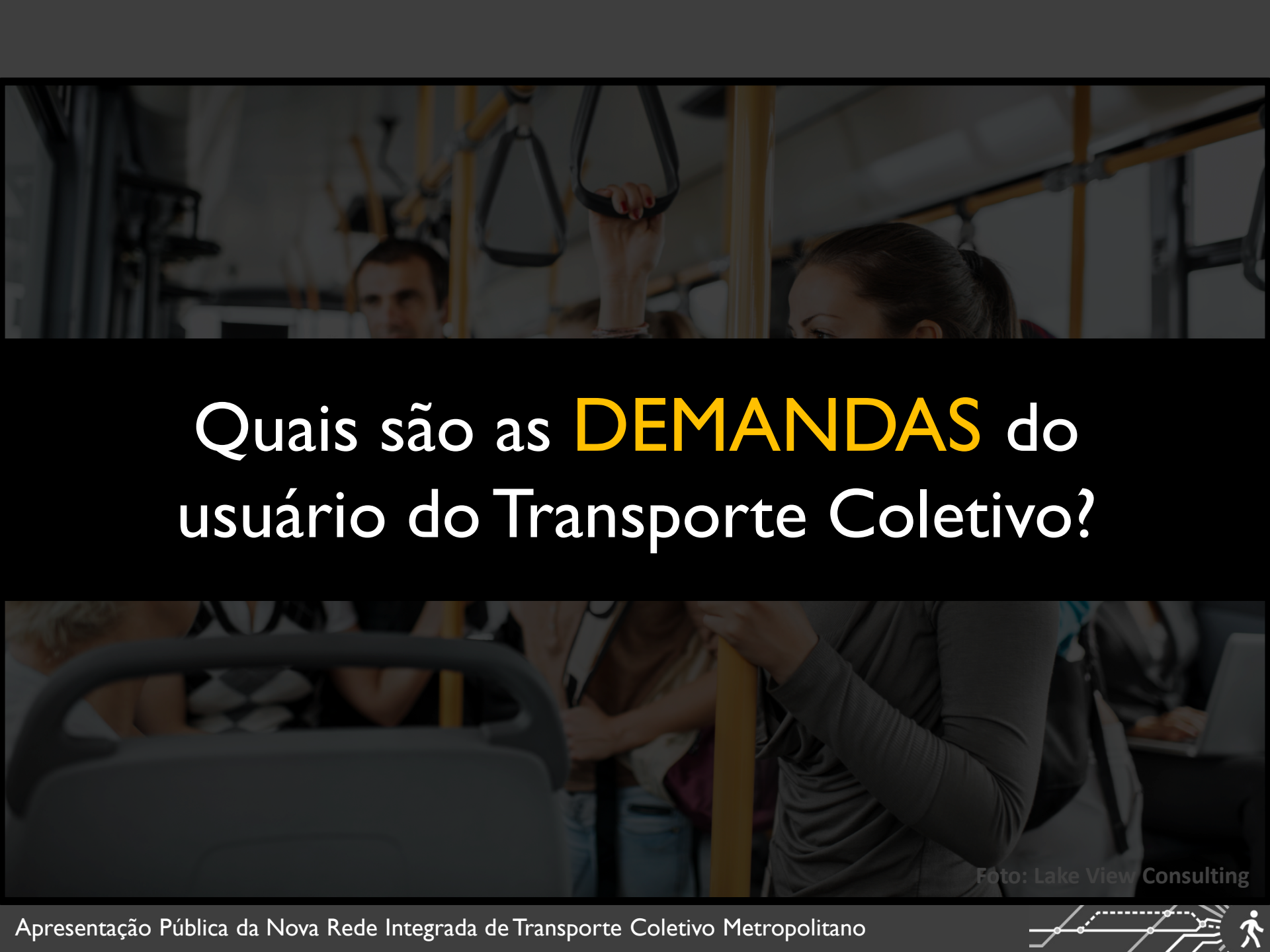
Capacidade de transportar

**ALTO NÚMERO DE PASSAGEIROS**

**DIFERENTES**

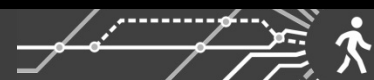
origens, destinos e propósitos





Quais são as **DEMANDAS** do usuário do Transporte Coletivo?

Foto: Lake View Consulting



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir

Foto: Mariana Gil – V



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir

Foto: Mariana Gil – V





# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir
3. É um bom uso do meu **TEMPO**

Foto: Mariana Gil – Vinte e Nove



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir
3. É um bom uso do meu **TEMPO**
4. É um bom uso do meu **DINHEIRO**

Foto: Mariana Gil – Vinte e Nove



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir
3. É um bom uso do meu **TEMPO**
4. É um bom uso do meu **DINHEIRO**
5. Ele me **RESPEITA** como cidadão

Foto: Mariana Gil – Vinte e Nove



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir
3. É um bom uso do meu **TEMPO**
4. É um bom uso do meu **DINHEIRO**
5. Ele me **RESPEITA** como cidadão
6. Eu posso **CONFIAR** no serviço

Foto: Mariana Gil – V



# DEMANDAS do Usuário

1. Ele me leva **AONDE** eu quero ir
2. Ele me leva **QUANDO** eu quero ir
3. É um bom uso do meu **TEMPO**
4. É um bom uso do meu **DINHEIRO**
5. Ele me **RESPEITA** como cidadão
6. Eu posso **CONFIAR** no serviço
7. Ele me dá **LIBERDADE** para mudar meus planos

Foto: Mariana Gil – V





# Como **ATENDER** às **DEMANDAS** do usuário do Transporte Coletivo?


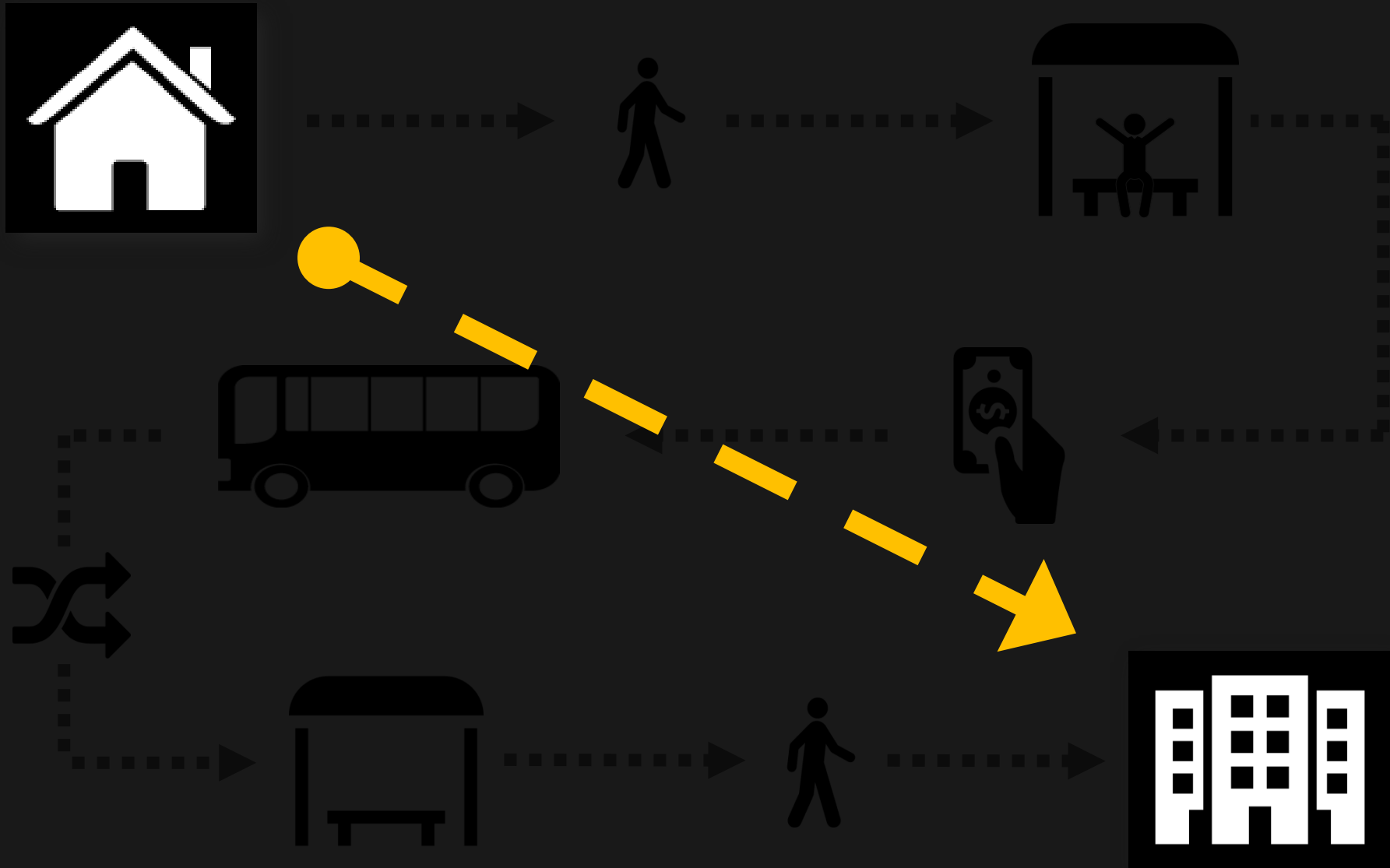
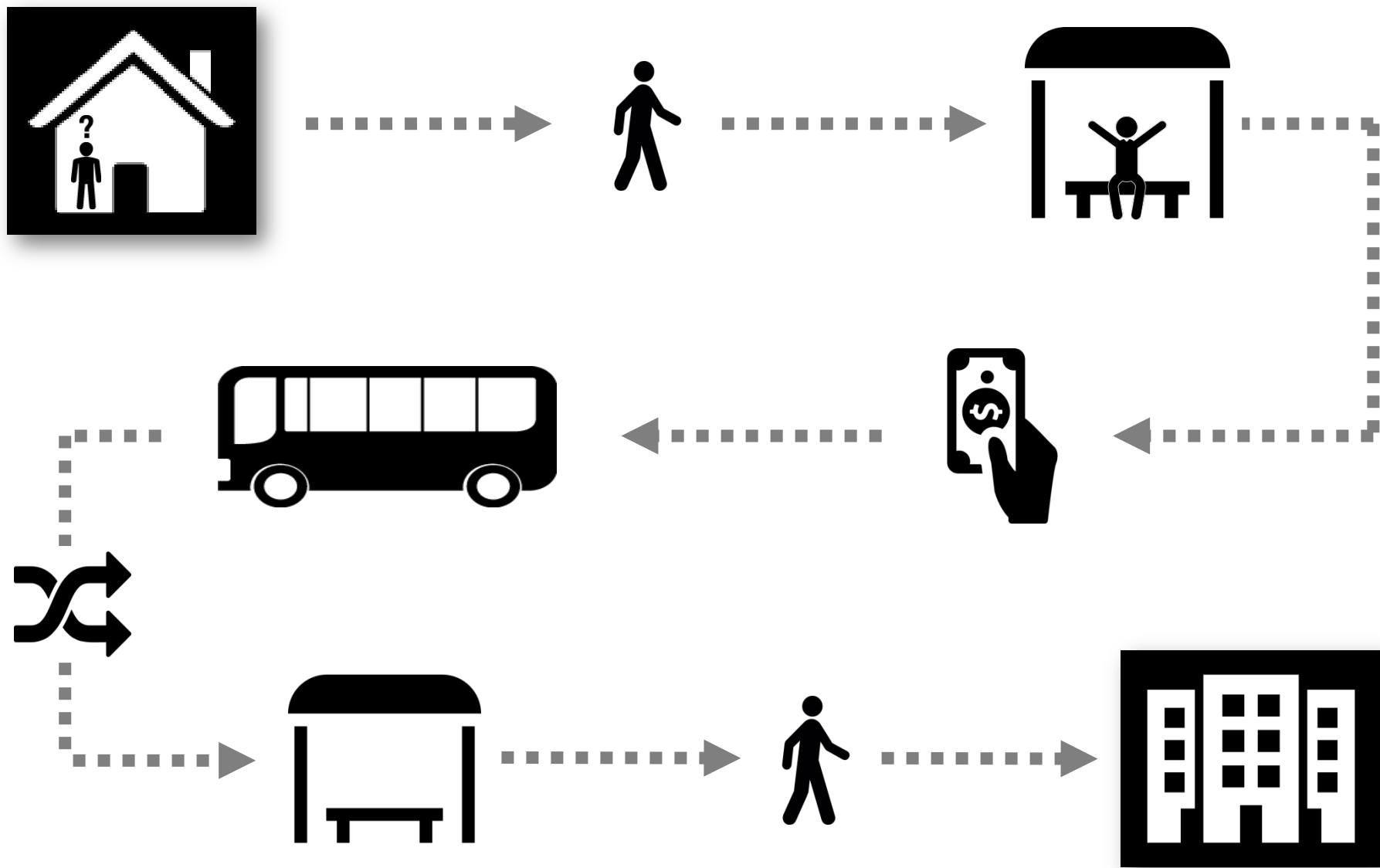


Foto: BH Trans





# O deslocamento do **Usuário** de Transporte Coletivo







# DESAFIOS para viabilizar um Transporte Coletivo de Alta Qualidade



Foto: Mettis BRT



Determinar

**ROTAS, FREQUÊNCIAS, HORÁRIOS e TARIFAS**

para que pessoas com

**DIFERENTES ORIGENS e DESTINOS**

façam seus deslocamentos ao mesmo tempo

e sejam motivadas a

**ESCOLHER o TRANSPORTE COLETIVO.**

Foto: Mettis BRT



# DESAFIOS do Transporte Coletivo

Qual a **DISPONIBILIDADE** que possuímos,  
como sociedade, para arcar com os **CUSTOS** de um  
sistema que **ATENDA ÀS DEMANDAS**  
da população?

Foto: Mettis BRT



# NOVA REDE INTEGRADA DE TRANSPORTE COLETIVO METROPOLITANO

## MUNICÍPIO DE PALHOÇA



# SISTEMA DIRETO X SISTEMA TRONCO-ALIMENTADOR



OBSERVATÓRIO  
DA MOBILIDADE URBANA  
**UFSC**



**UNIVERSIDADE FEDERAL  
DE SANTA CATARINA**

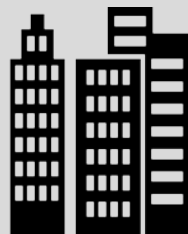
**Sistema Direto**

**Sistema Conectado**

**Sistema Tronco-Alimentador**



Bairro 1



Bairro 2



Bairro 3

Parque



Universidade



Centro  
Histórico

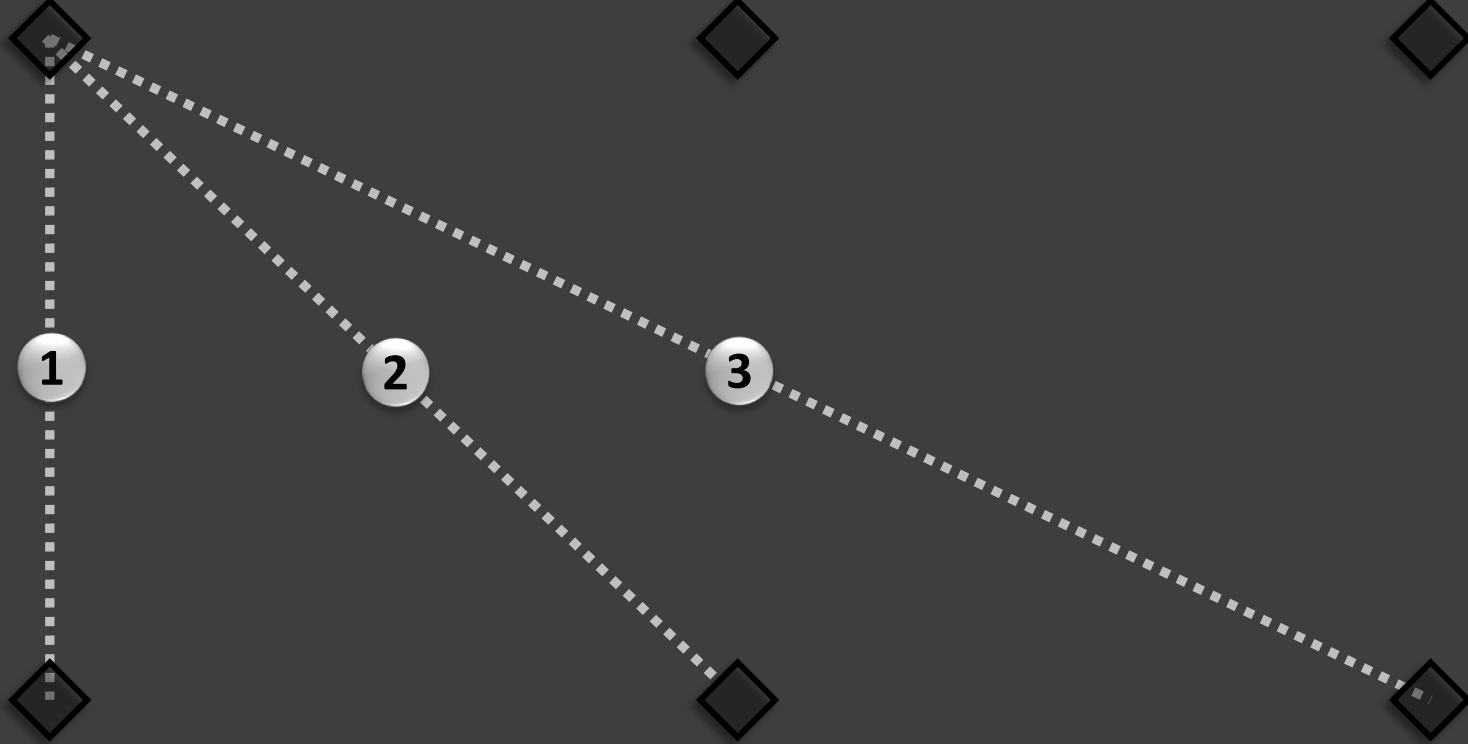


# SISTEMA DIRETO

- ✓ Conexões diretas entre todos os pontos de interesse
- ✓ Menor trajeto possível entre quaisquer dois pontos





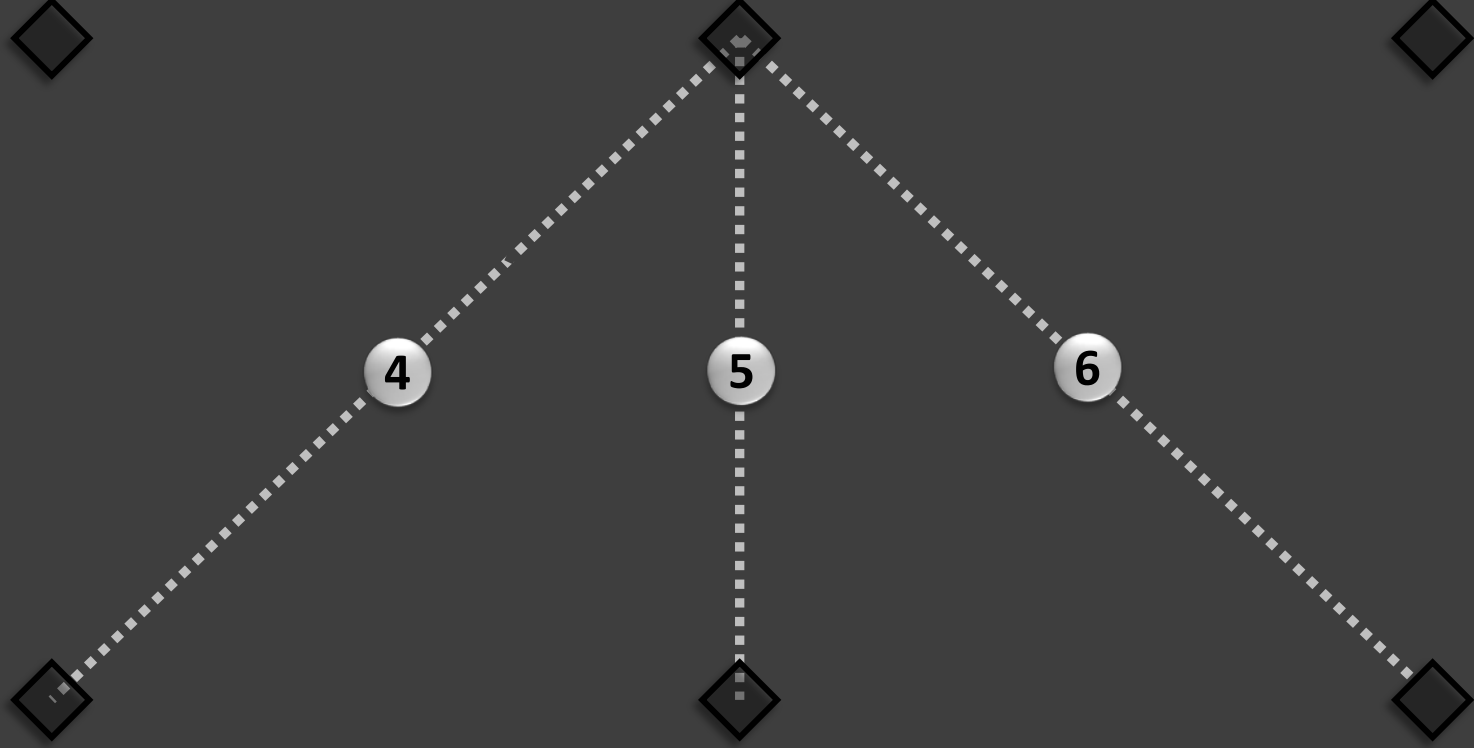




4

5

6





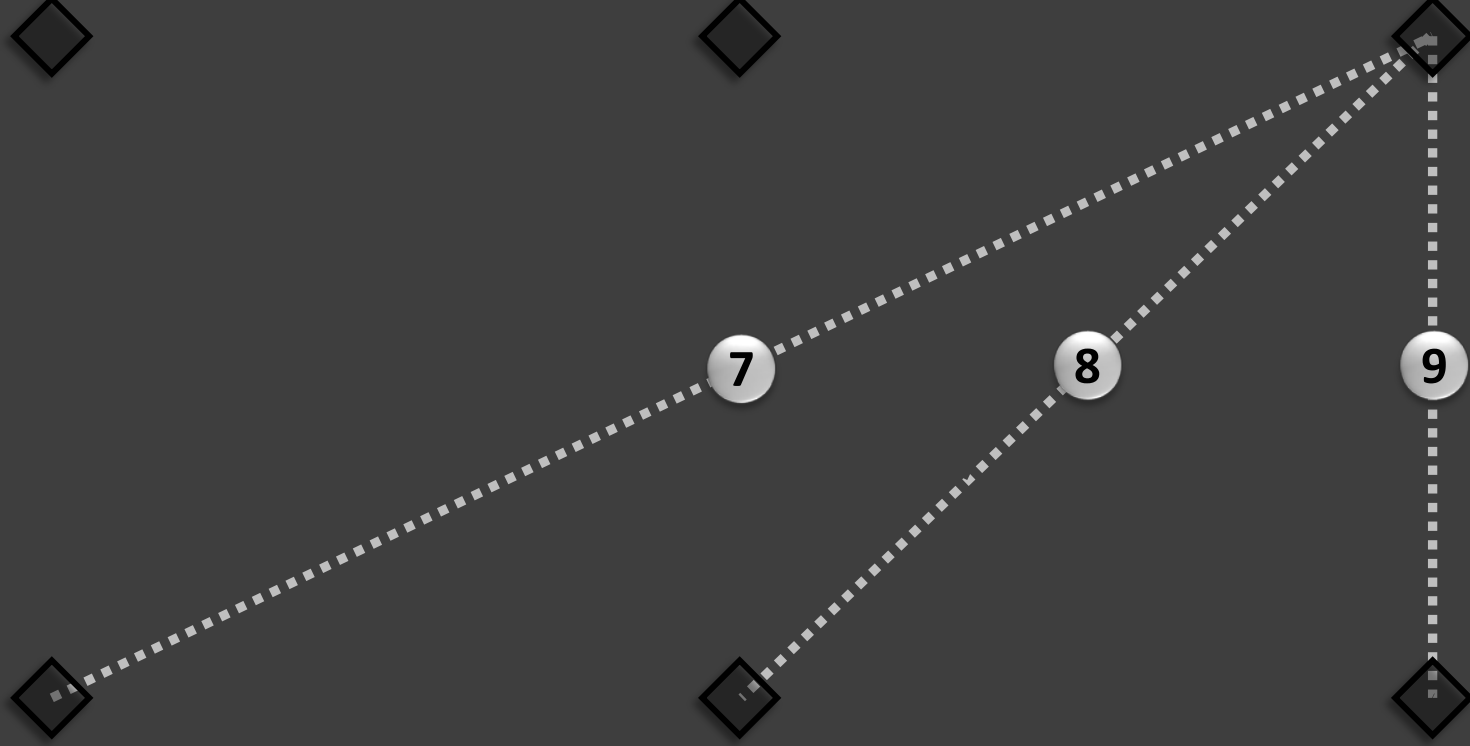
7

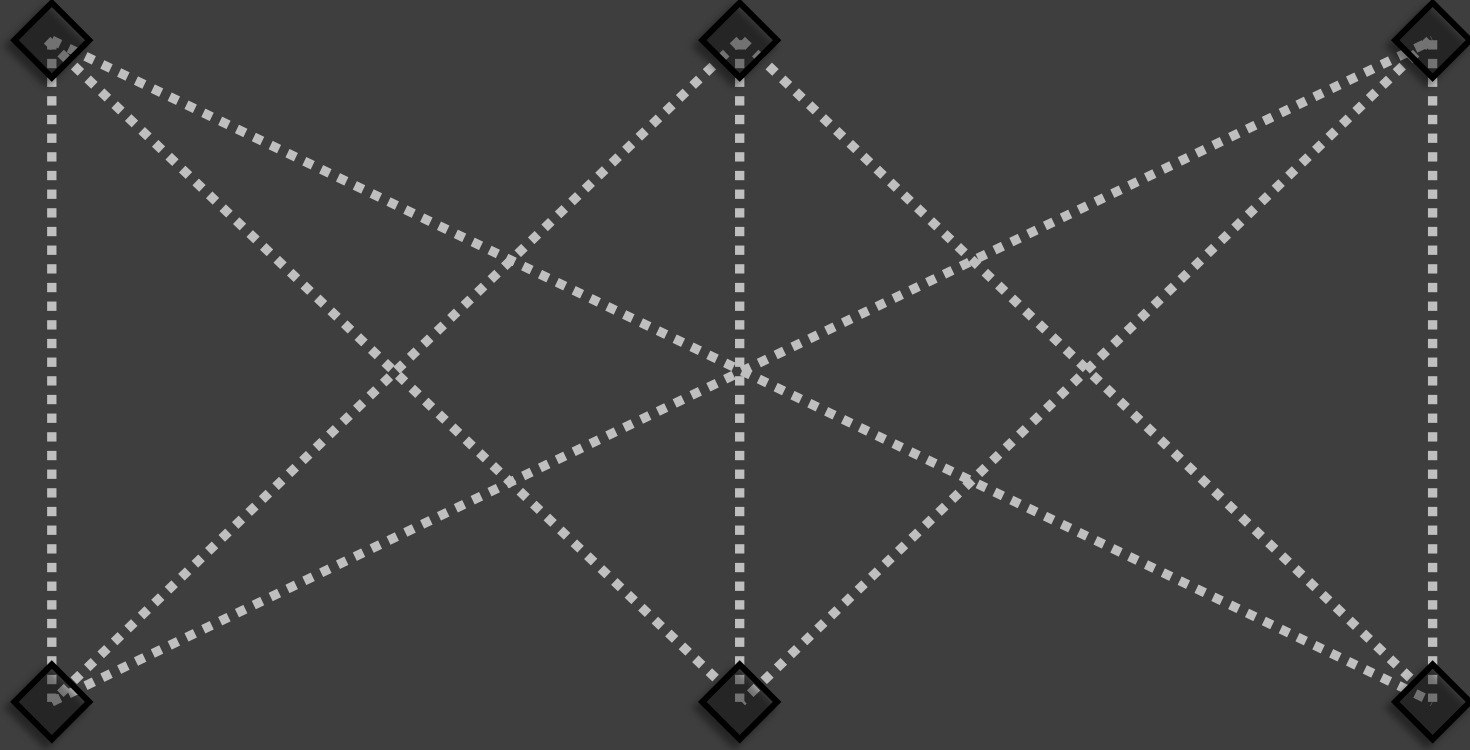


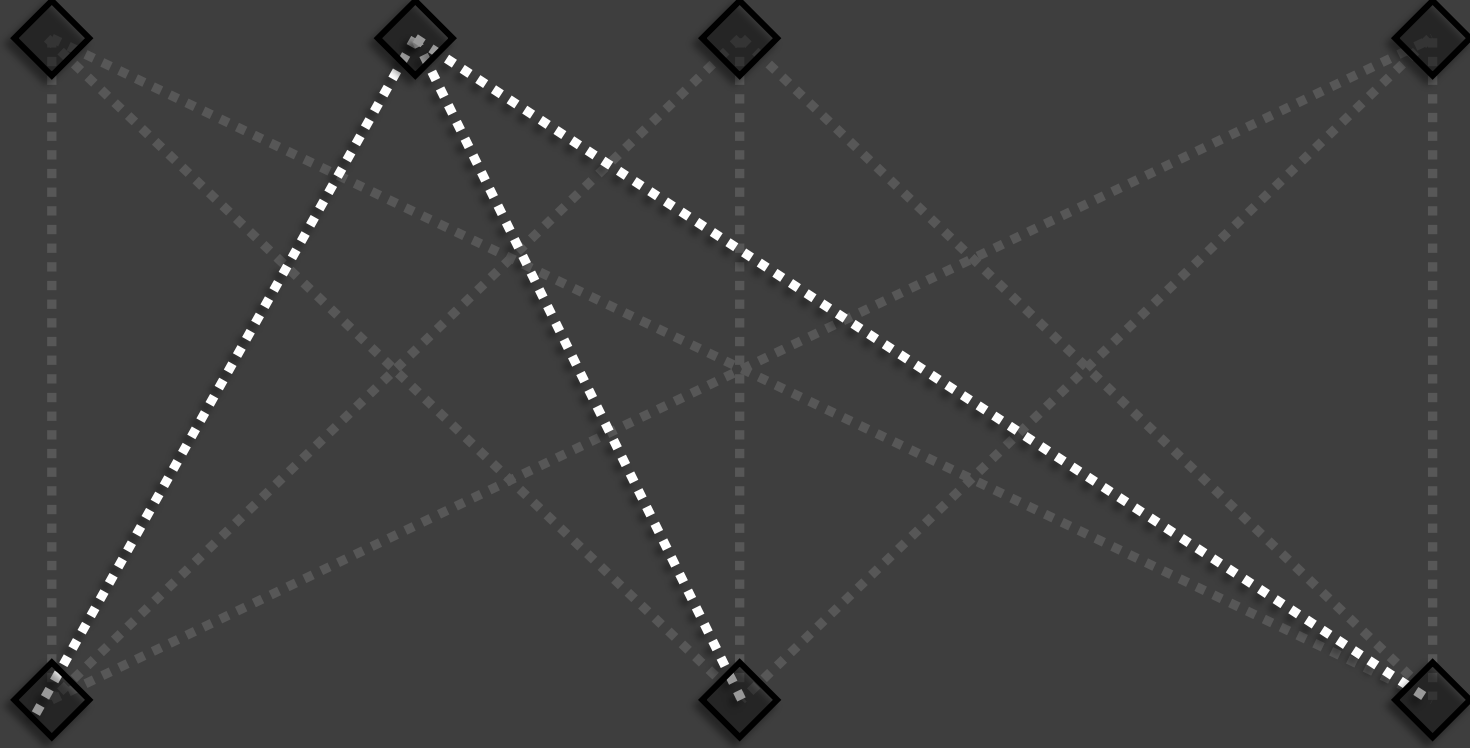
8



9





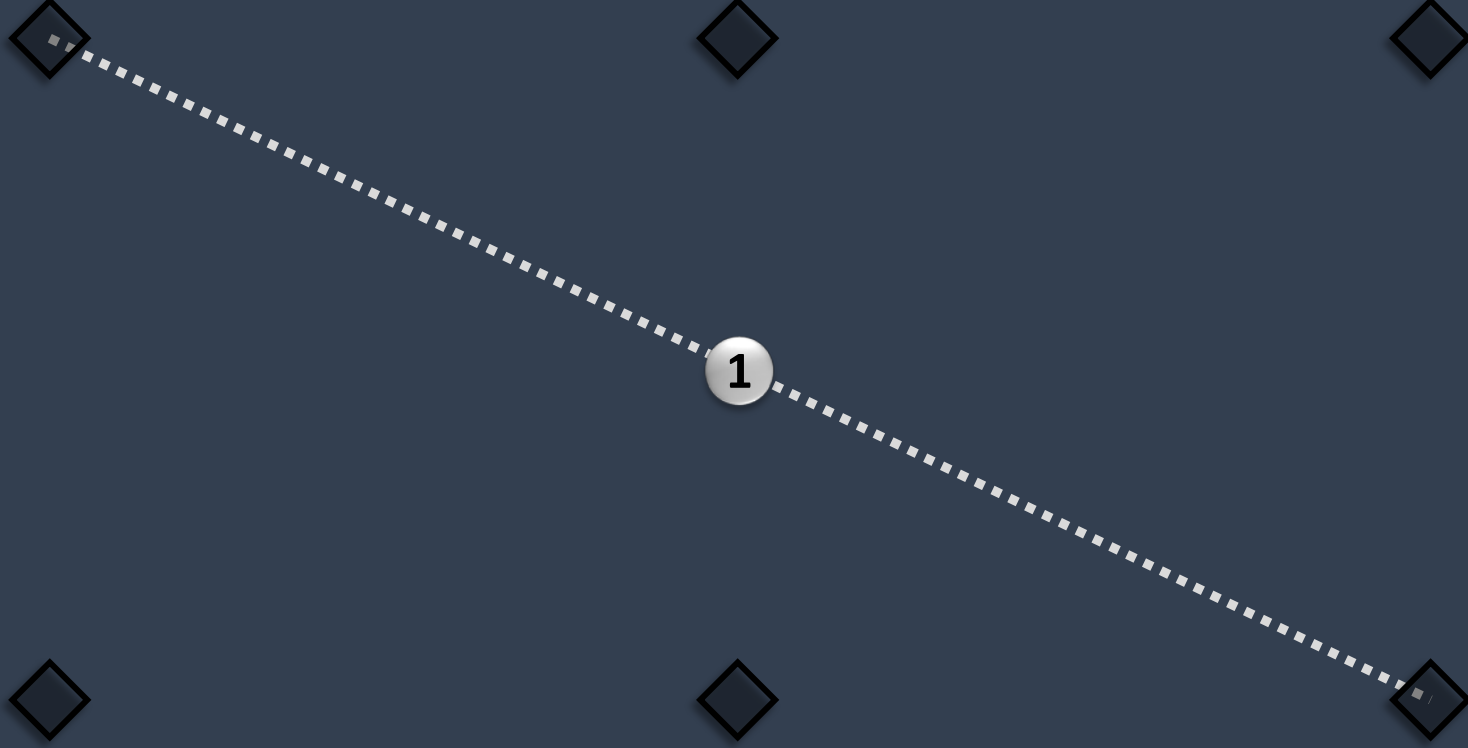


# SISTEMA CONECTADO

- ✓ Conexões indiretas entre todos os pontos de interesse
- ✓ Trajetos entre pontos de interesse e um ponto de integração

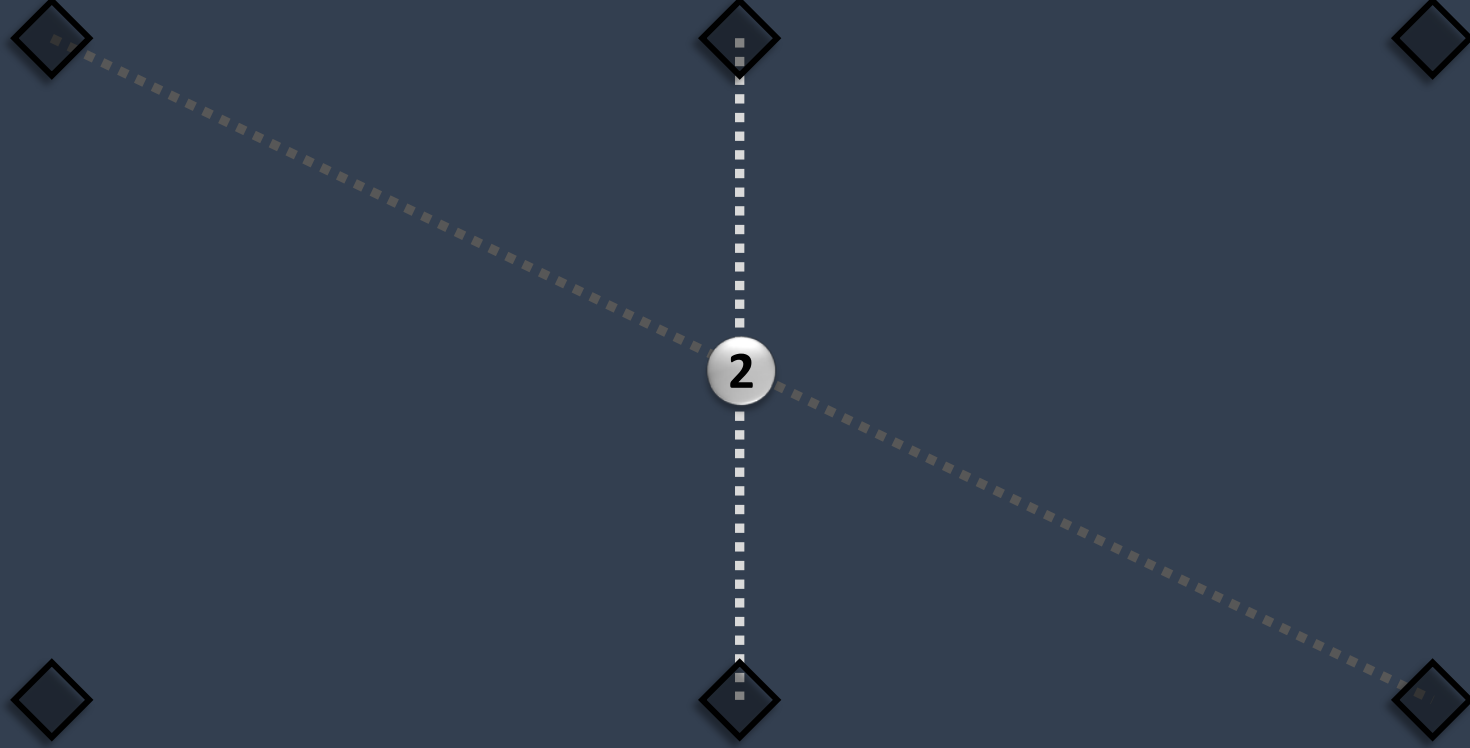


1





2

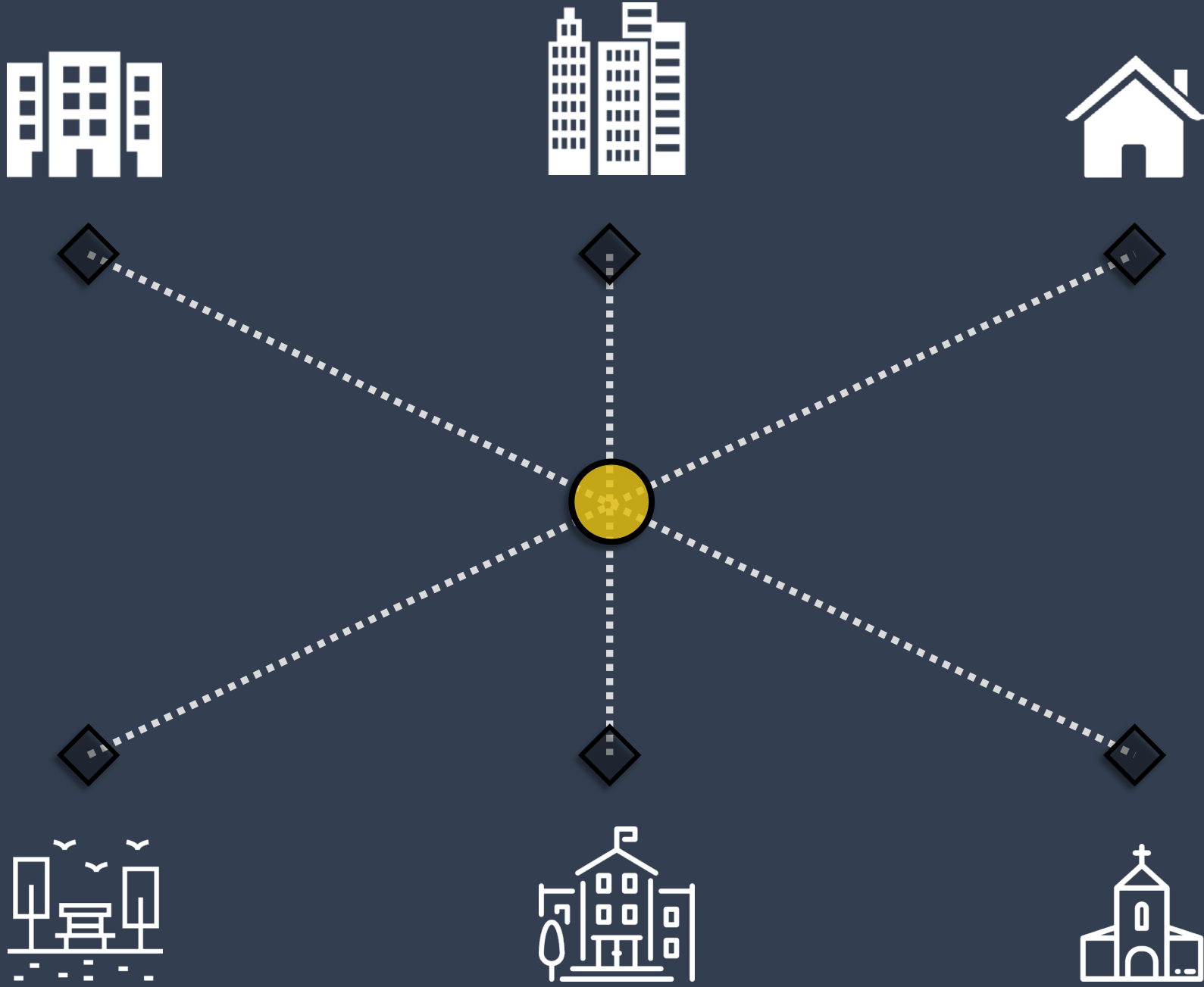


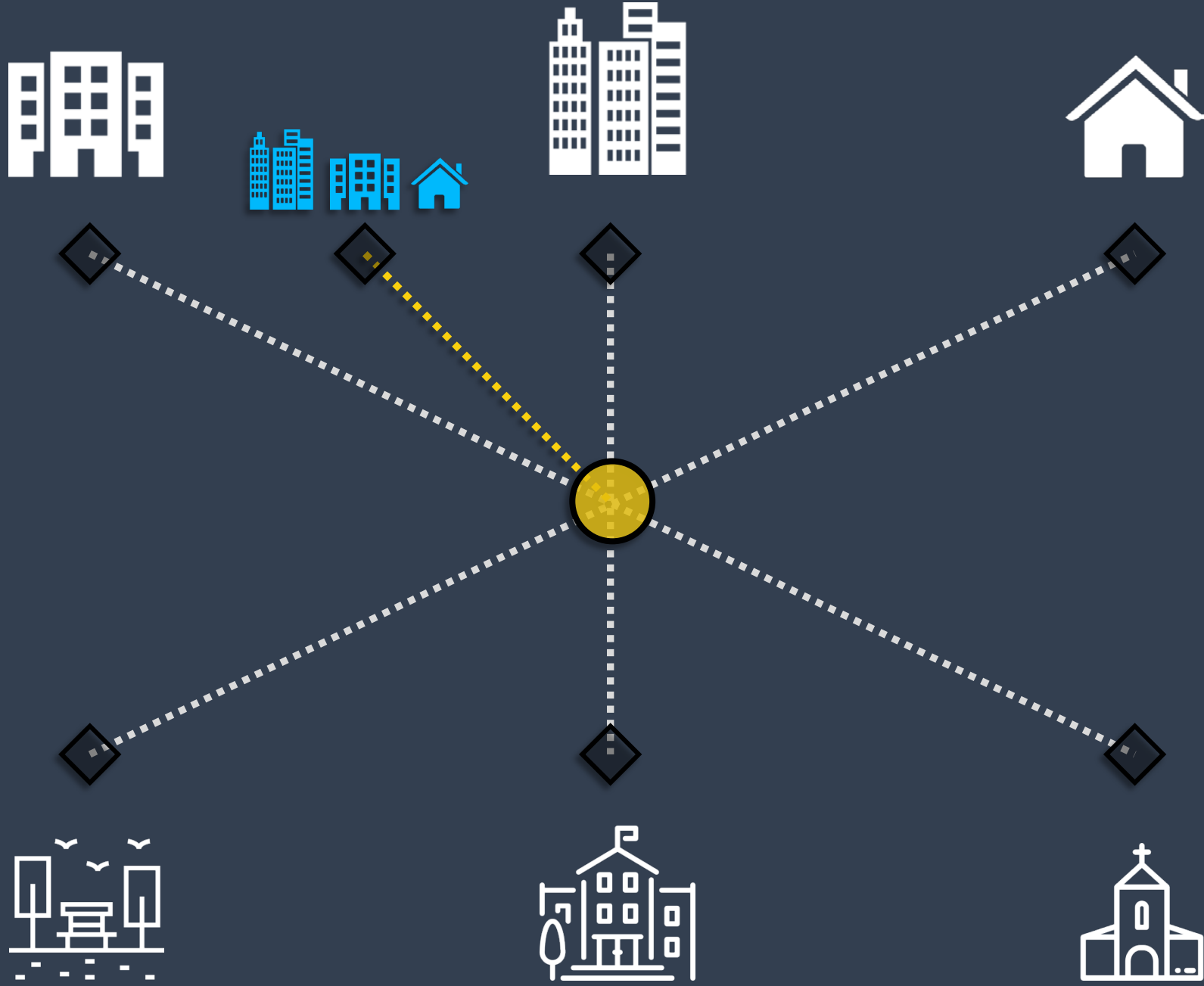




3

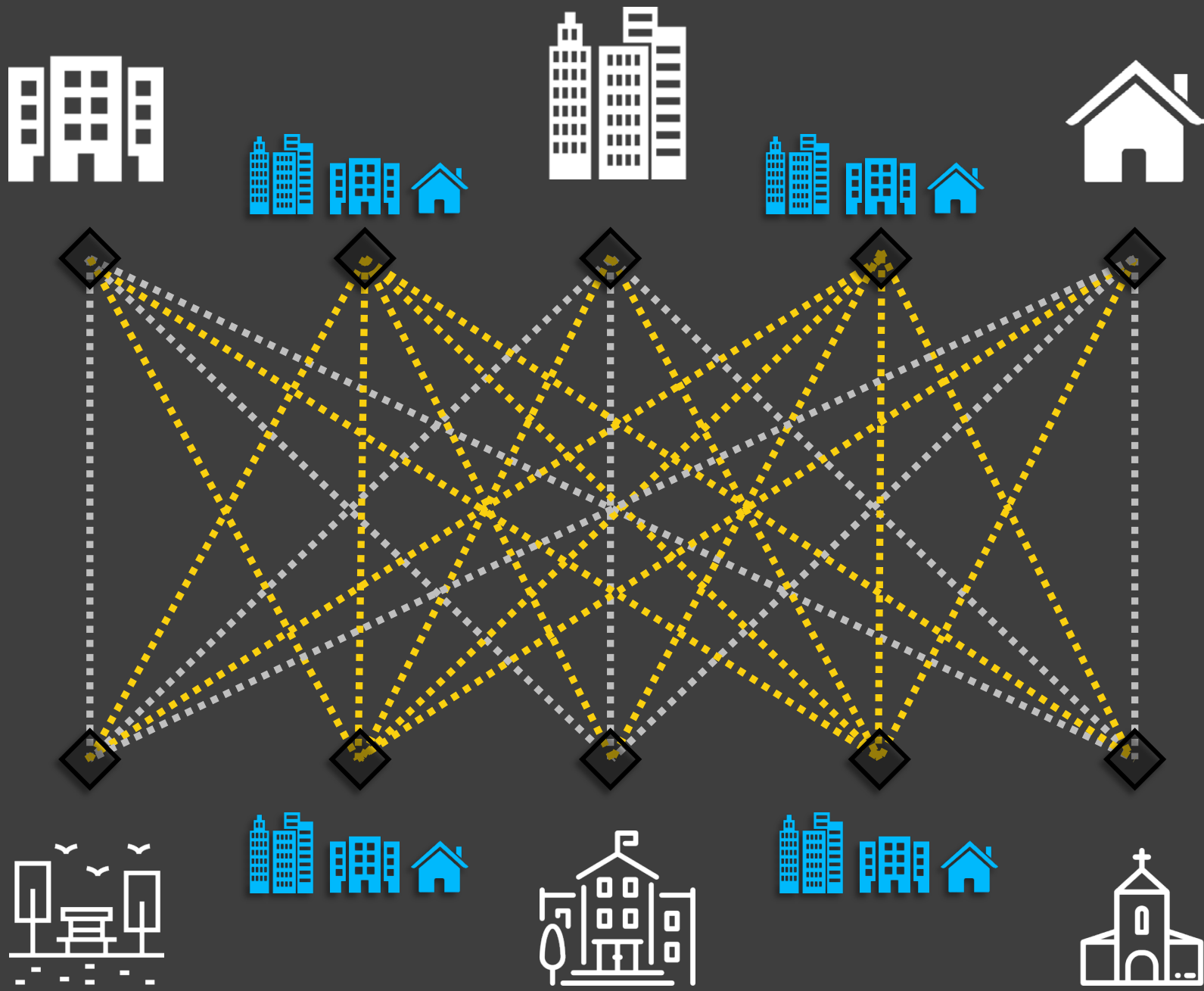


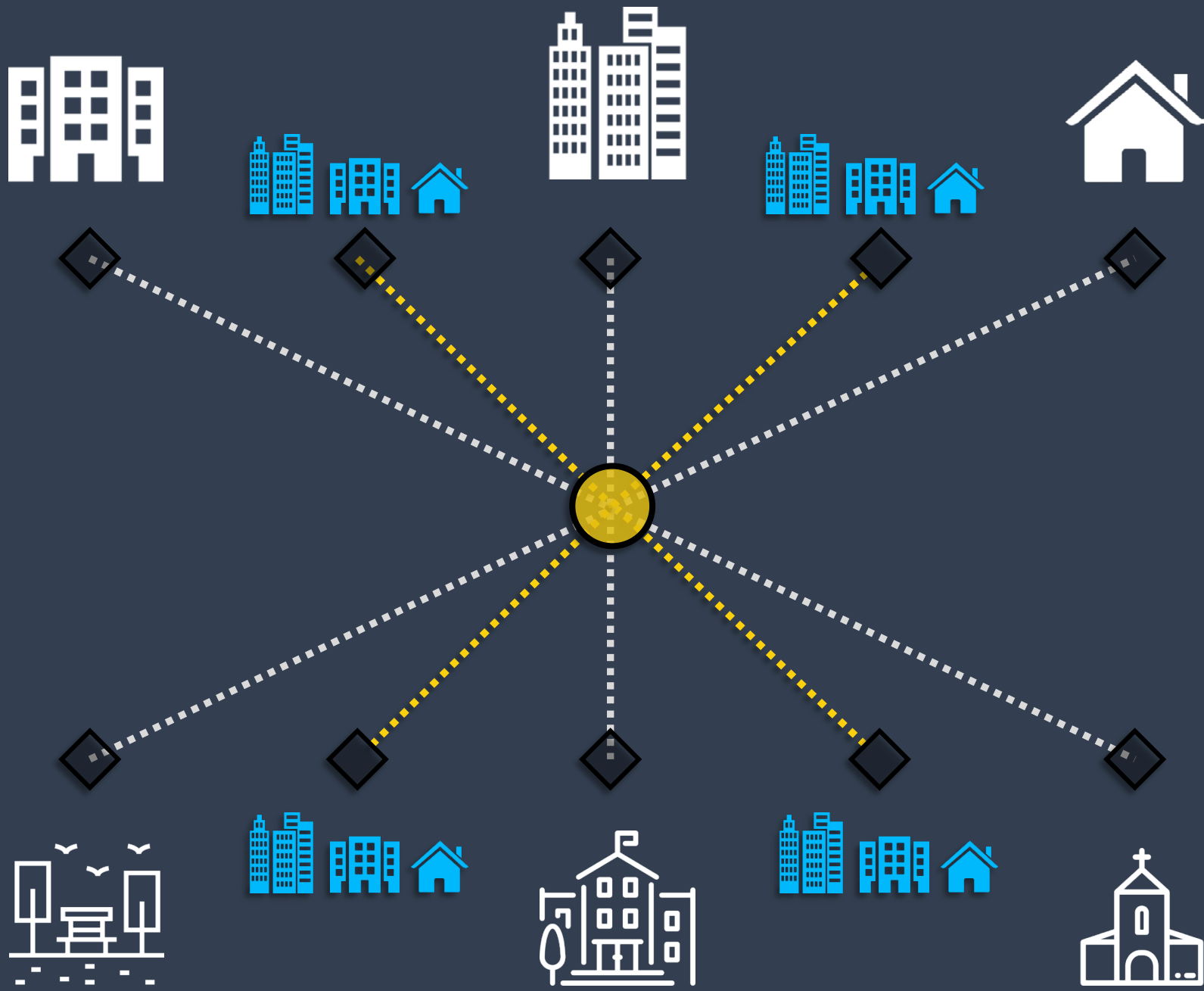




# COMPARATIVOS

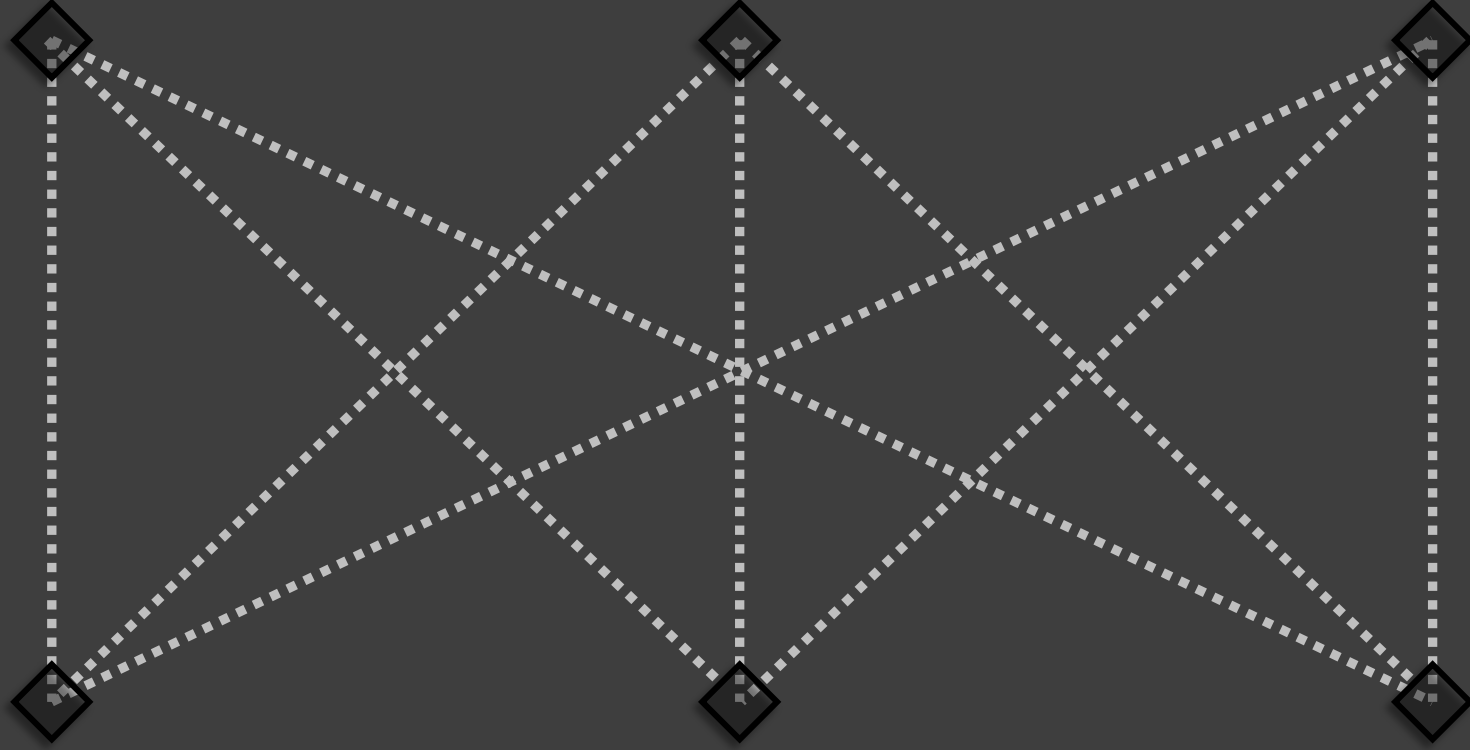
## Expansão do Sistema



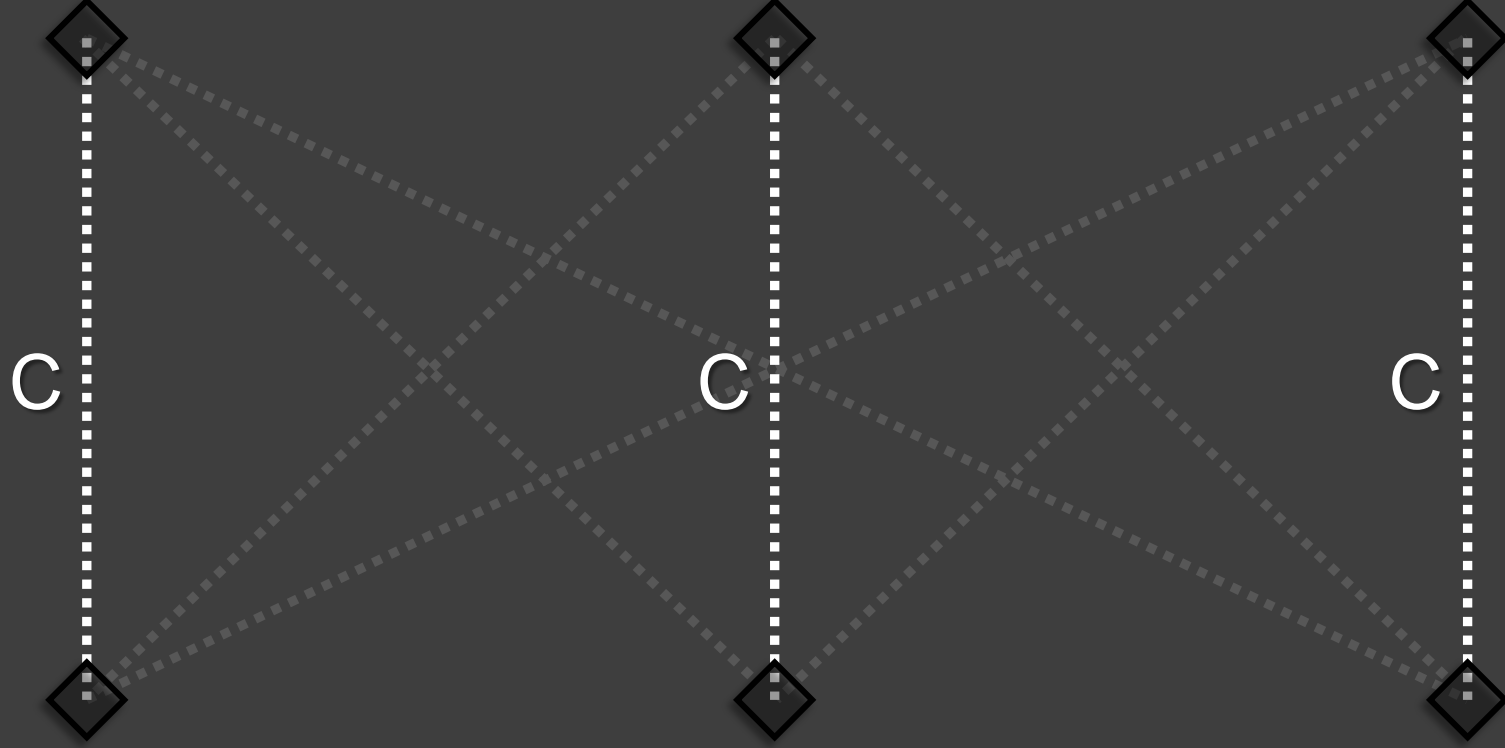


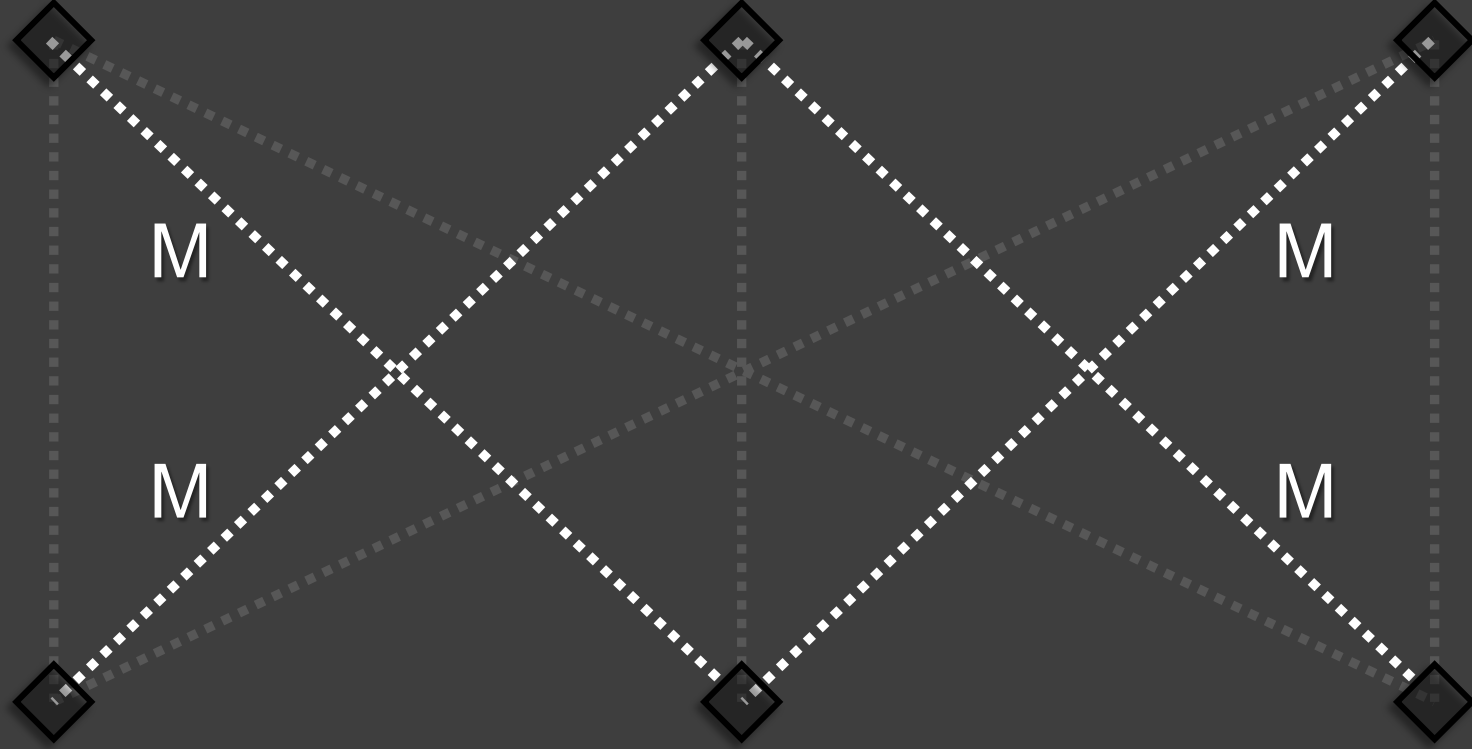
# COMPARATIVO

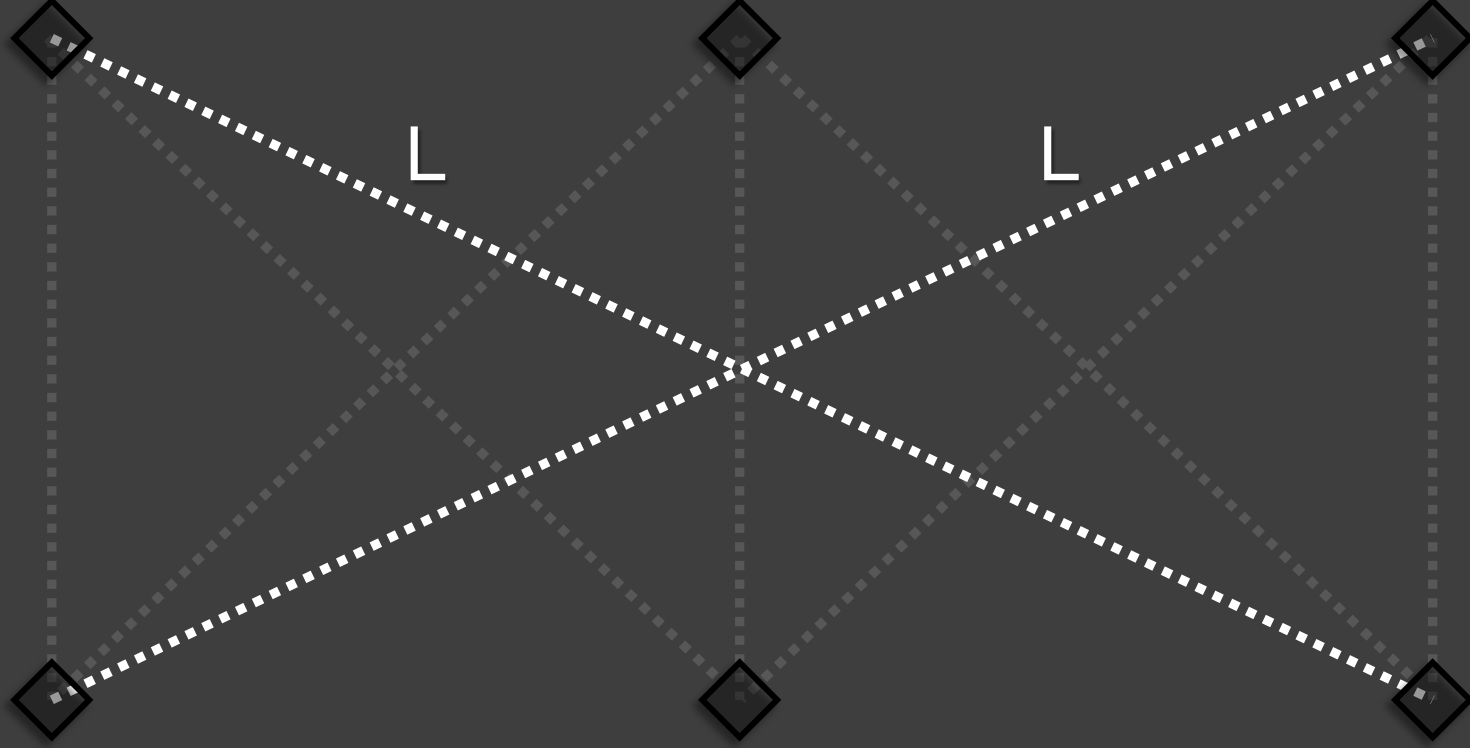
## Custos

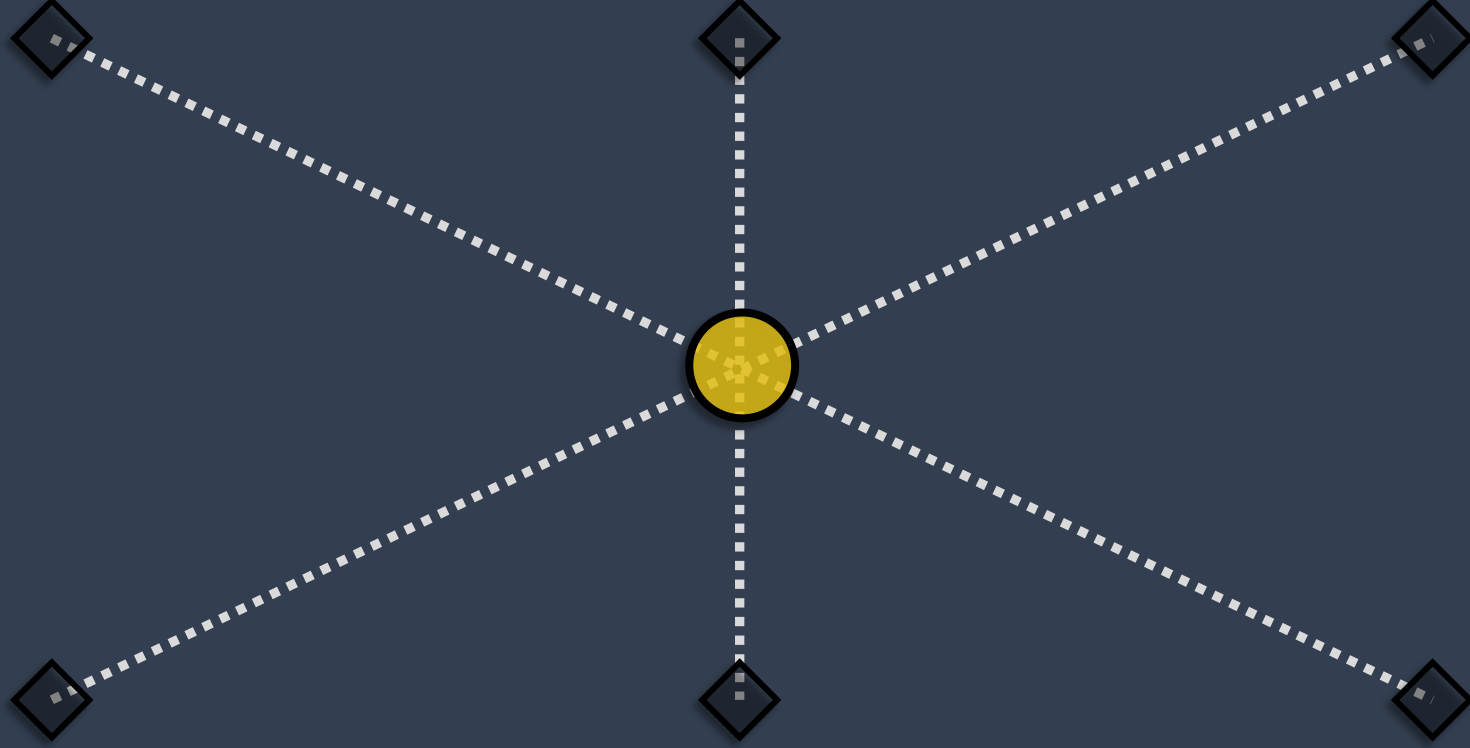


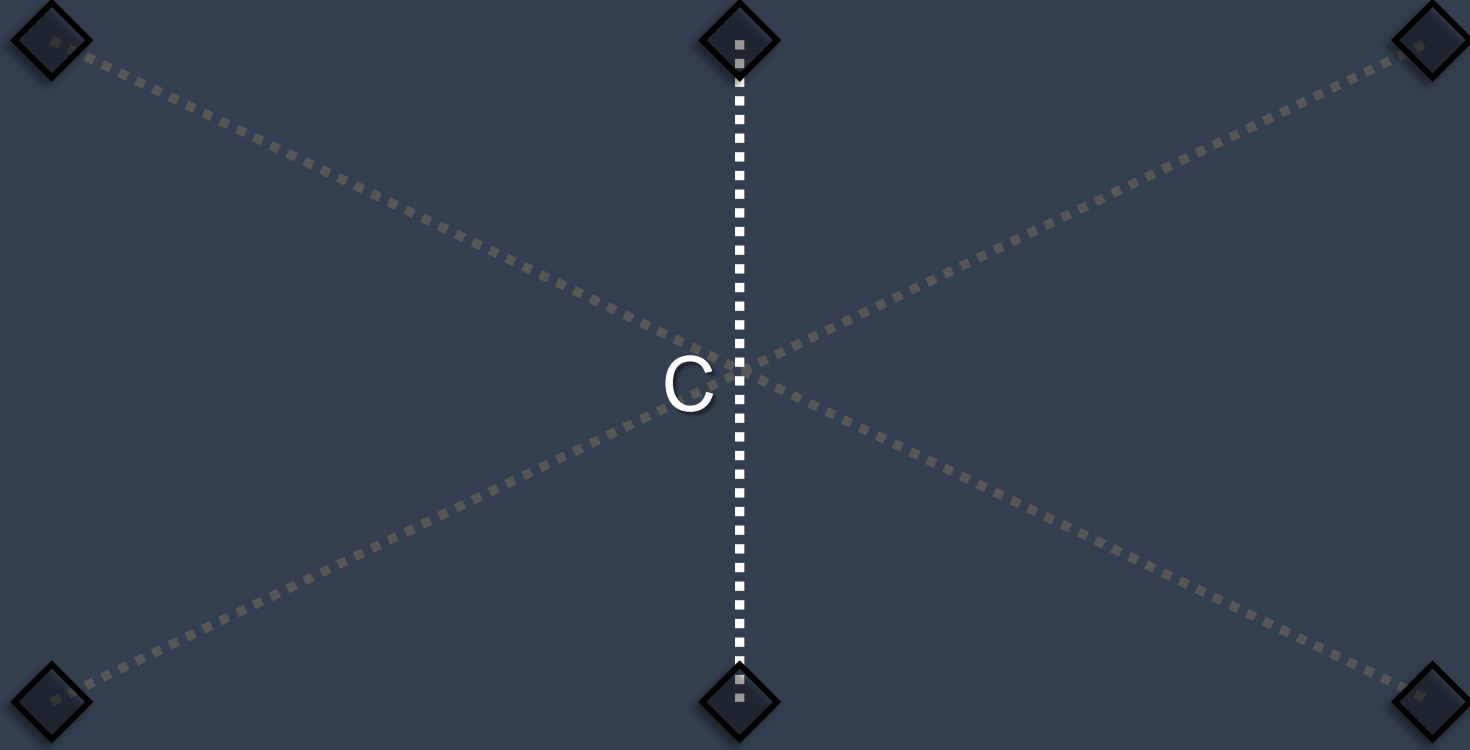


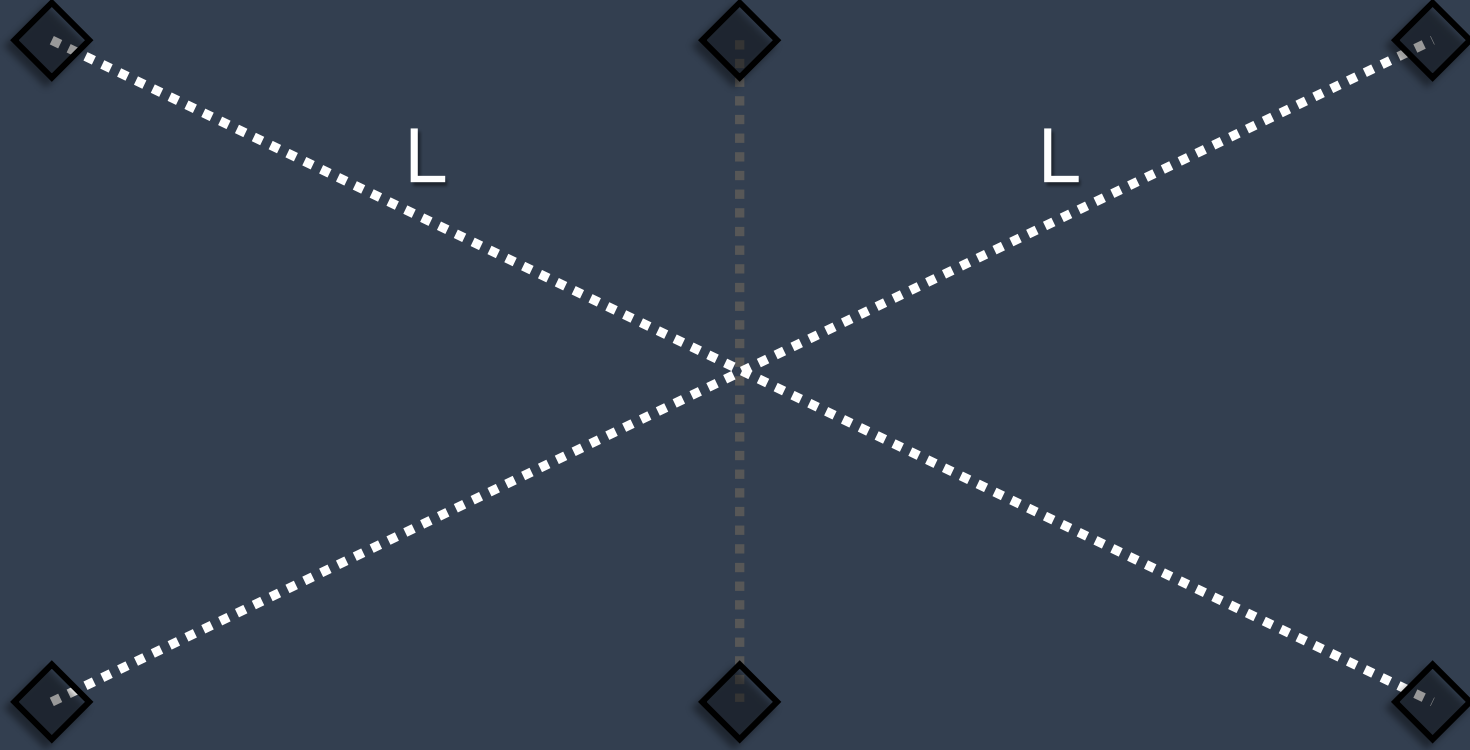














# CUSTOS – Sistema com Serviços Diretos

Linha	Tipo	Comprimento Viagem IDA + VOLTA (Km)	Tempo de Viagem IDA + VOLTA (Minutos)	Motorista	Cobrador	Km / Viagem	Custo Motorista (R\$ 36,00/hora)	Custo Cobrador (R\$ 24,00/hora)	Combustível e Manutenção (R\$ 2,00/Km)	TOTAL LINHA
<b>1</b>	C	6	20	1	1	12	R\$ 12,00	R\$ 8,00	R\$ 2,10	<b>R\$ 22,10</b>
<b>2</b>	M	10	30	1	1	20	R\$ 18,00	R\$ 12,00	R\$ 3,50	<b>R\$ 33,50</b>
<b>3</b>	L	14	40	1	1	28	R\$ 24,00	R\$ 16,00	R\$ 4,90	<b>R\$ 44,90</b>
<b>4</b>	M	10	30	1	1	20	R\$ 18,00	R\$ 12,00	R\$ 3,50	<b>R\$ 33,50</b>
<b>5</b>	C	6	20	1	1	12	R\$ 12,00	R\$ 8,00	R\$ 2,10	<b>R\$ 22,10</b>
<b>6</b>	M	10	30	1	1	20	R\$ 18,00	R\$ 12,00	R\$ 3,50	<b>R\$ 33,50</b>
<b>7</b>	L	14	40	1	1	28	R\$ 24,00	R\$ 16,00	R\$ 4,90	<b>R\$ 44,90</b>
<b>8</b>	M	10	30	1	1	20	R\$ 18,00	R\$ 12,00	R\$ 3,50	<b>R\$ 33,50</b>
<b>9</b>	C	6	20	1	1	12	R\$ 12,00	R\$ 8,00	R\$ 2,10	<b>R\$ 22,10</b>
<b>TOTAL</b>			<b>260</b>	<b>9</b>	<b>9</b>	<b>172</b>	<b>R\$ 156,00</b>	<b>R\$ 104,00</b>	<b>R\$ 30,10</b>	

**CUSTO TOTAL (Uma viagem por linha): R\$ 290,10**

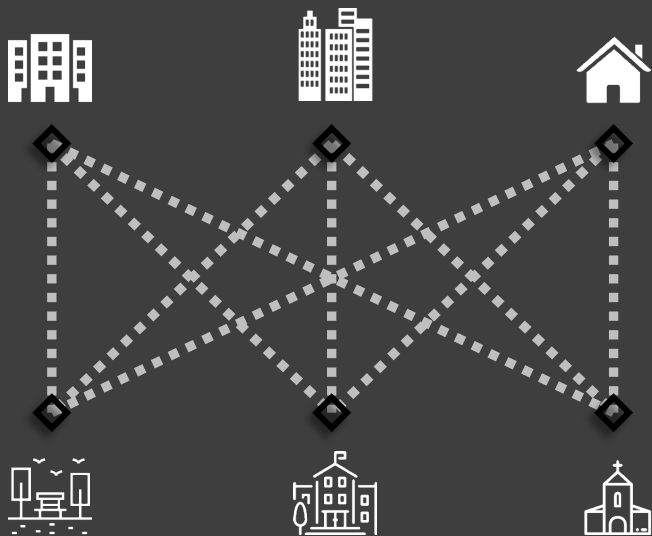


# CUSTOS – Sistema com Serviços Conectados

Linha	Tipo	Comprimento Viagem IDA + VOLTA (Km)	Tempo de Viagem IDA + VOLTA (Minutos)	Motorista	Cobrador	Km / Viagem	Custo Motorista (R\$ 36/hora)	Custo Cobrador (R\$ 24/hora)	Custo Combustível (R\$ 0,35L/Km)	TOTAL LINHA
3	L	14	40	1	1	28	R\$ 24,00	R\$ 16,00	R\$ 4,90	R\$ 44,90
5	C	6	20	1	1	12	R\$ 12,00	R\$ 8,00	R\$ 2,10	R\$ 22,10
7	L	14	40	1	1	28	R\$ 24,00	R\$ 16,00	R\$ 4,90	R\$ 44,90
<b>TOTAL</b>			<b>100</b>	<b>3</b>	<b>3</b>	<b>68</b>	<b>R\$ 60,00</b>	<b>R\$ 40,00</b>	<b>R\$ 11,90</b>	

**CUSTO TOTAL (Uma viagem por linha): R\$ 111,90**

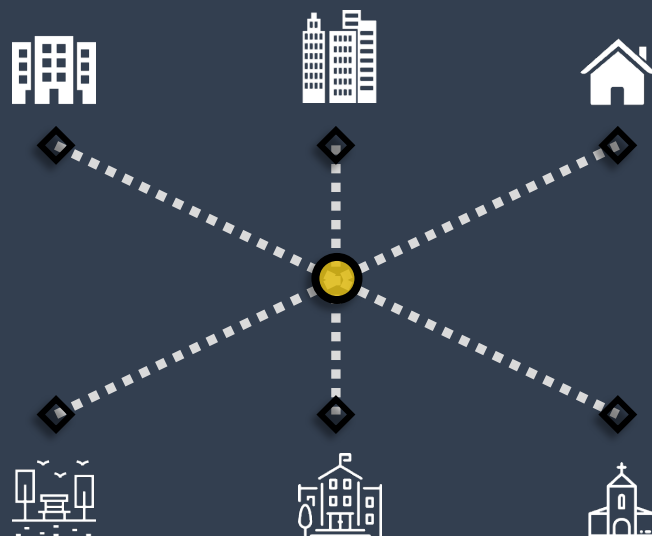
# CUSTOS – Resumo



**DUAS Viagens por Linha**

**R\$ 580,20**

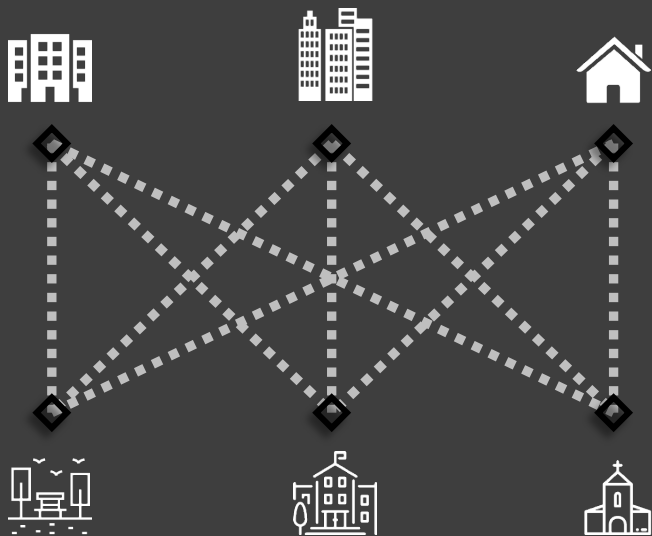
**Frequência 2,5 vezes maior  
pelo mesmo custo**



**CINCO Viagens por Linha**

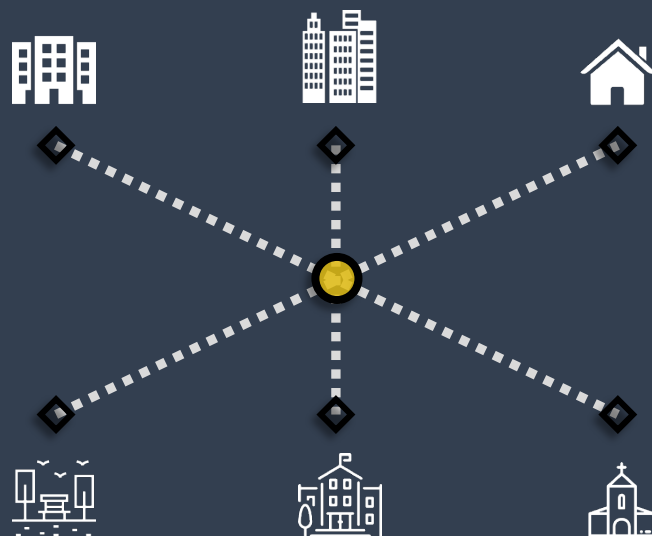
**R\$ 559,50**

# CUSTOS – Resumo



- Viagens mais **CURTAS**
- Mais **COMPLEXO**
- Maior tempo de **ESPERA**
- Menor **FREQUÊNCIA**
- Maior **CUSTO** nas Horas-Pico

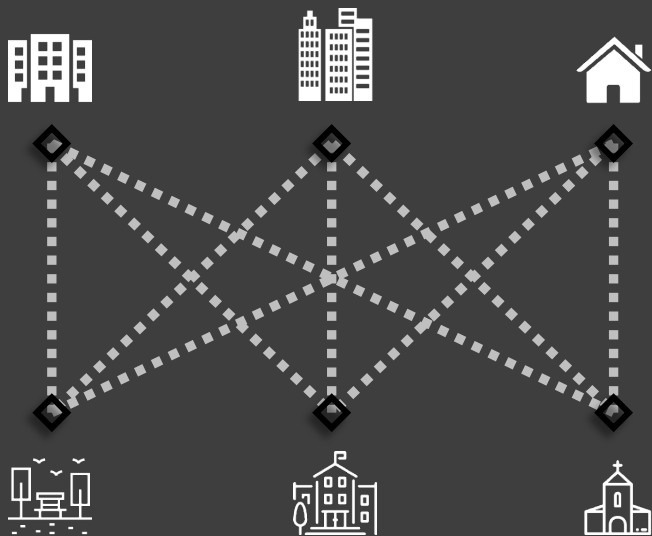
**R\$ 290,10**



- Menor **TEMPO** de viagem
- Maior **FREQUÊNCIA**
- Maior **CONFIABILIDADE**
- Maior oferta de **HORÁRIOS**
- **ECONOMIA** de escala

**R\$ 111,90**

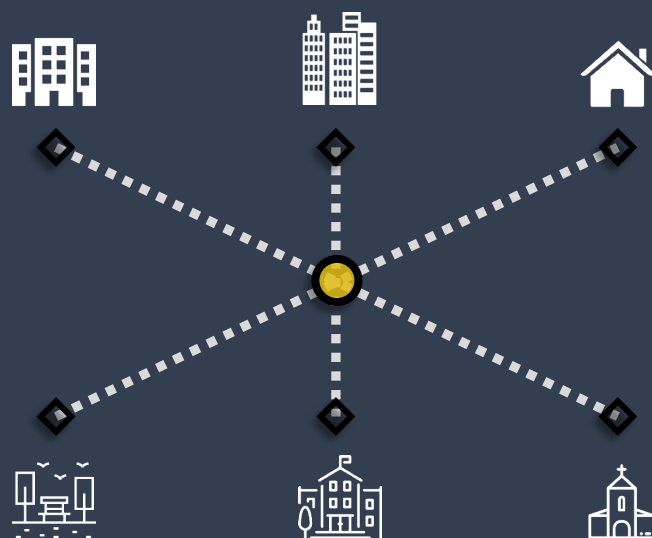
# CUSTOS – Resumo



Frequência

Headway

- Linhas C: 3 / hora 20 Min
- Linhas M: 2 / hora 30 Min
- Linhas L: 1,5 / hora 40 Min



Frequência

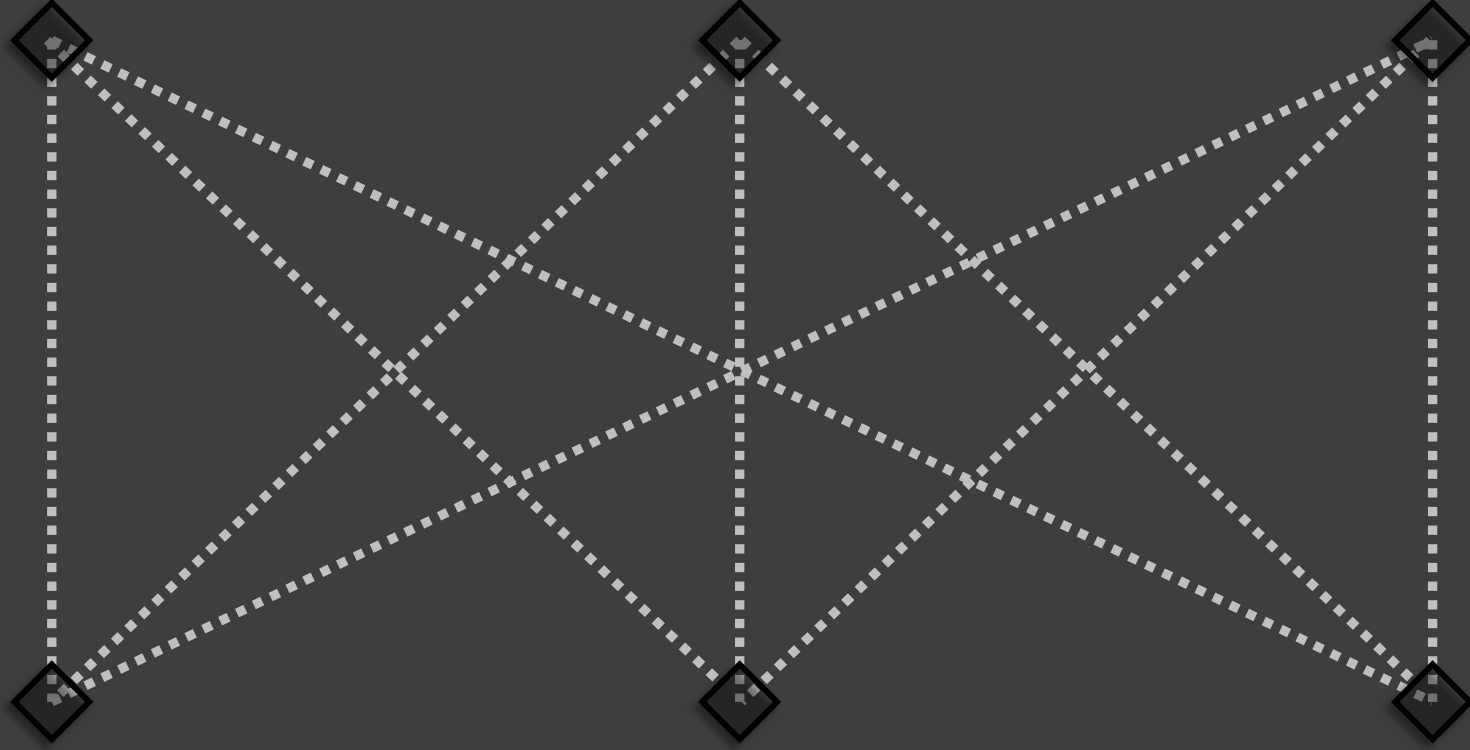
Headway

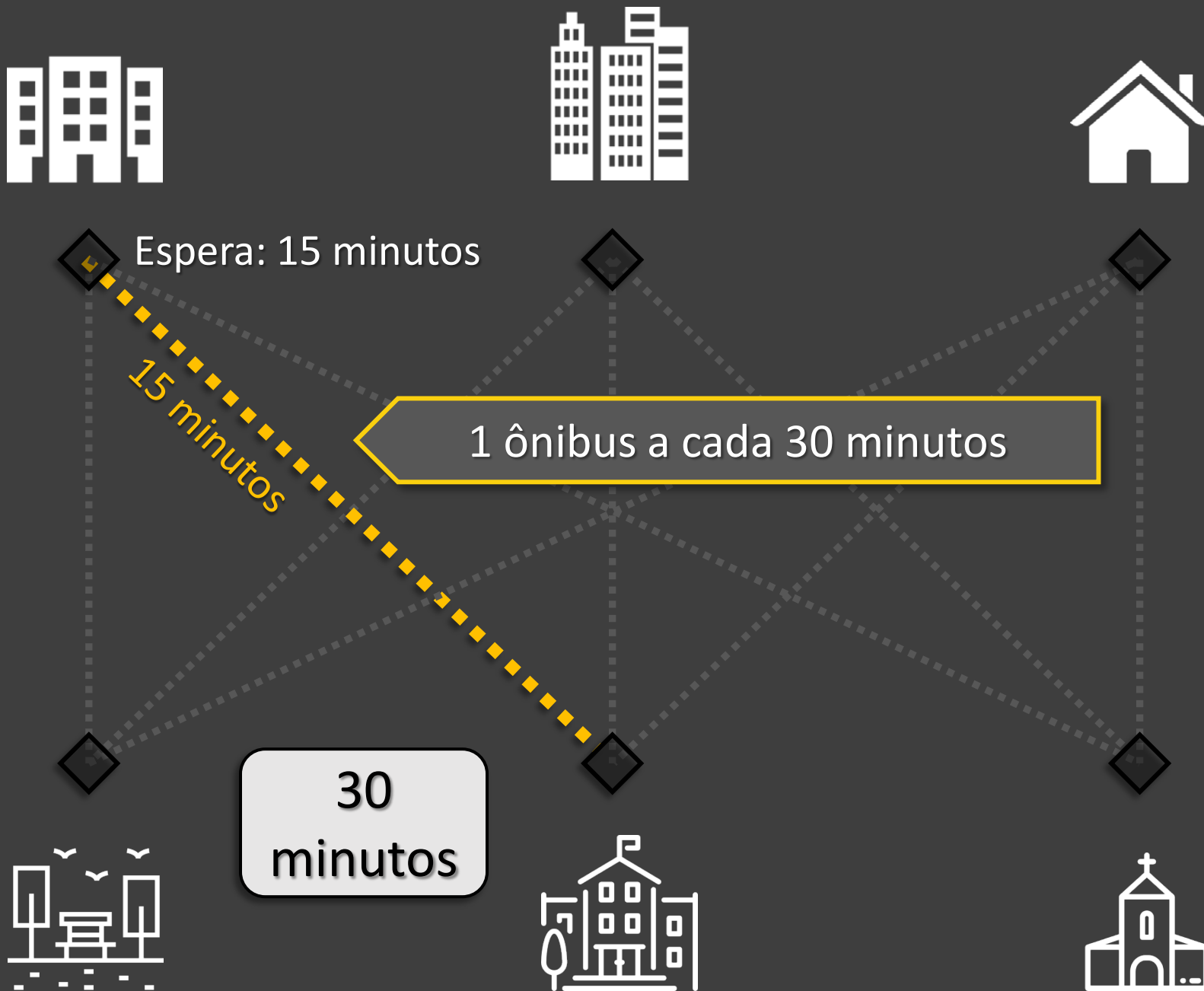
- Linha C: 7,5 / hora 8 Min
- Linhas L: 3,75 / hora 16 Min

# COMPARATIVO

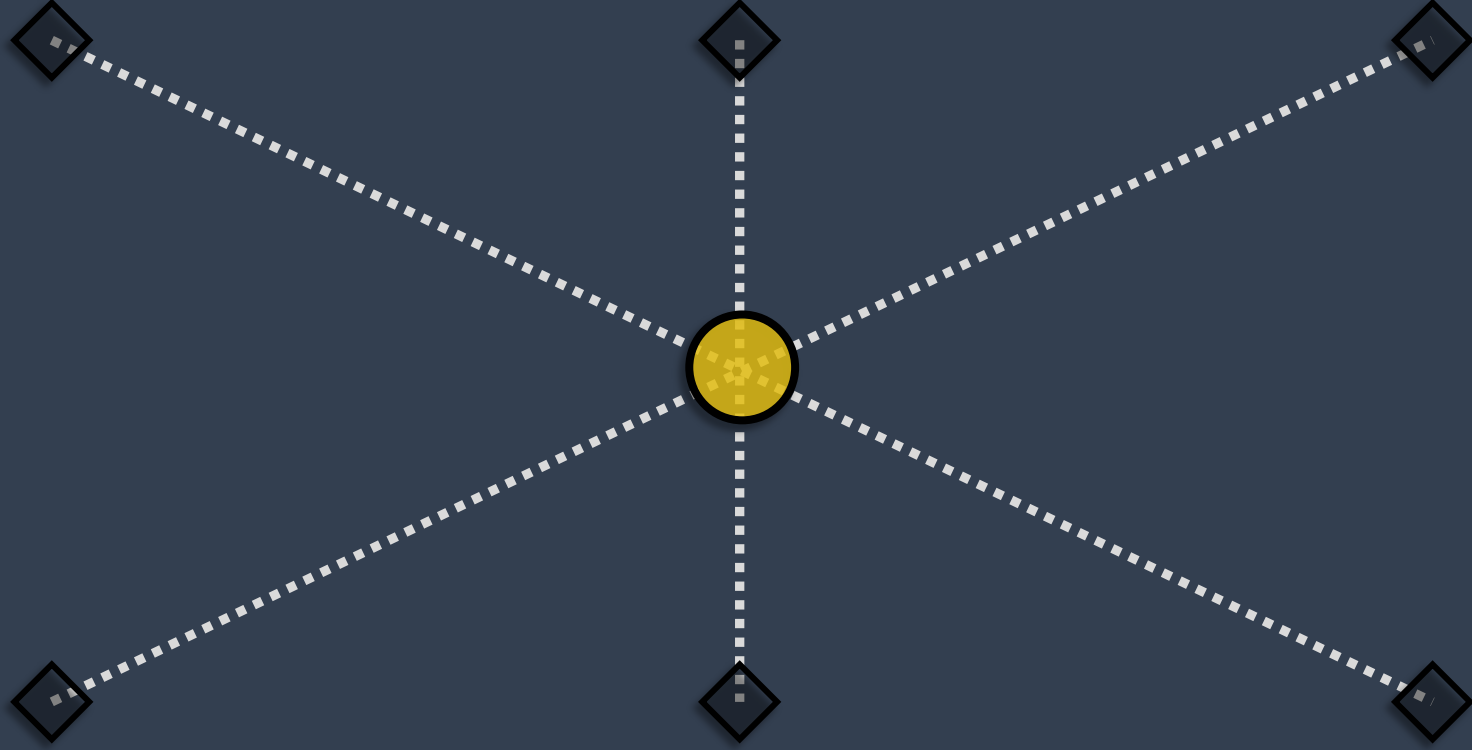
## Tempo de Viagem do Usuário

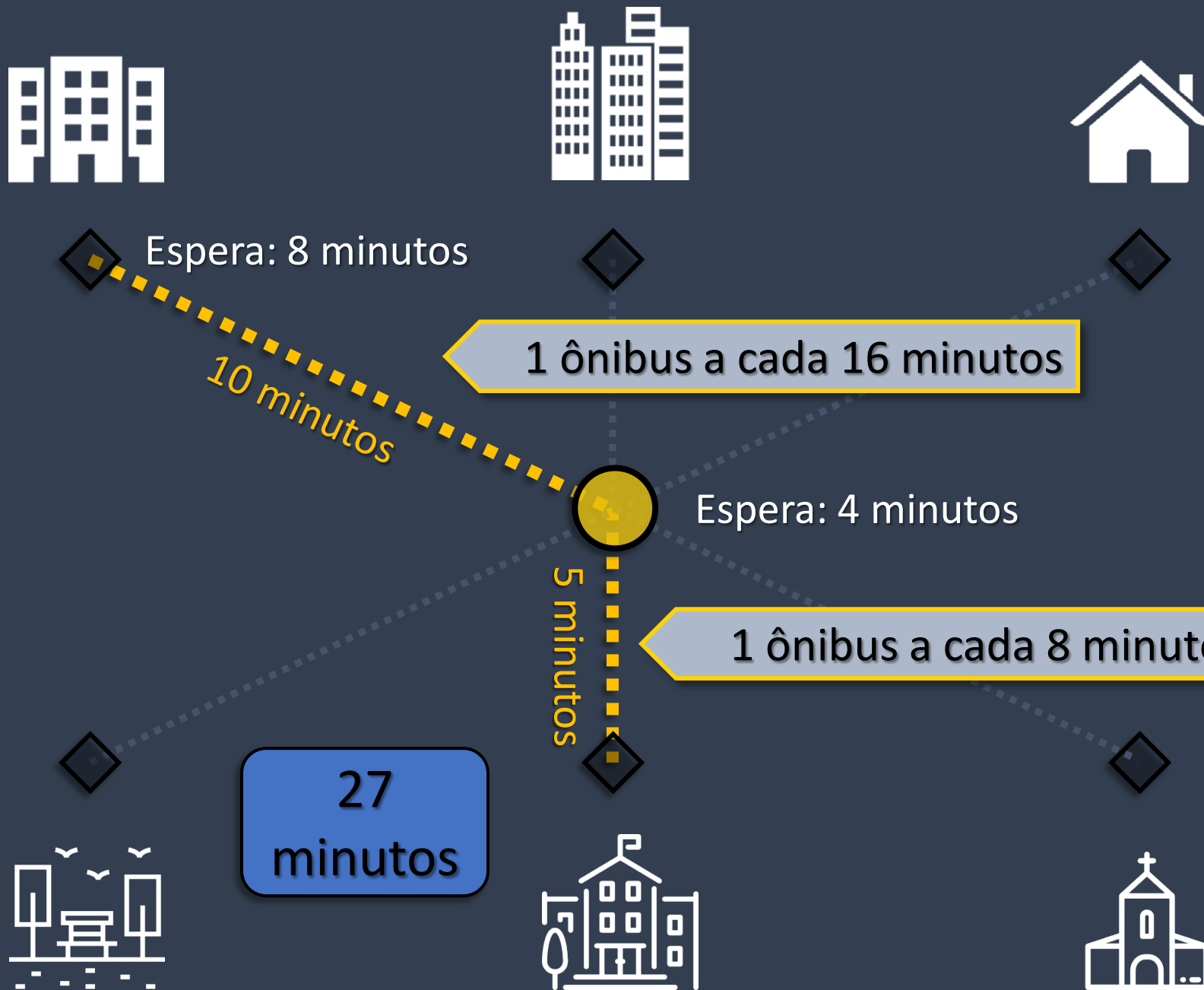




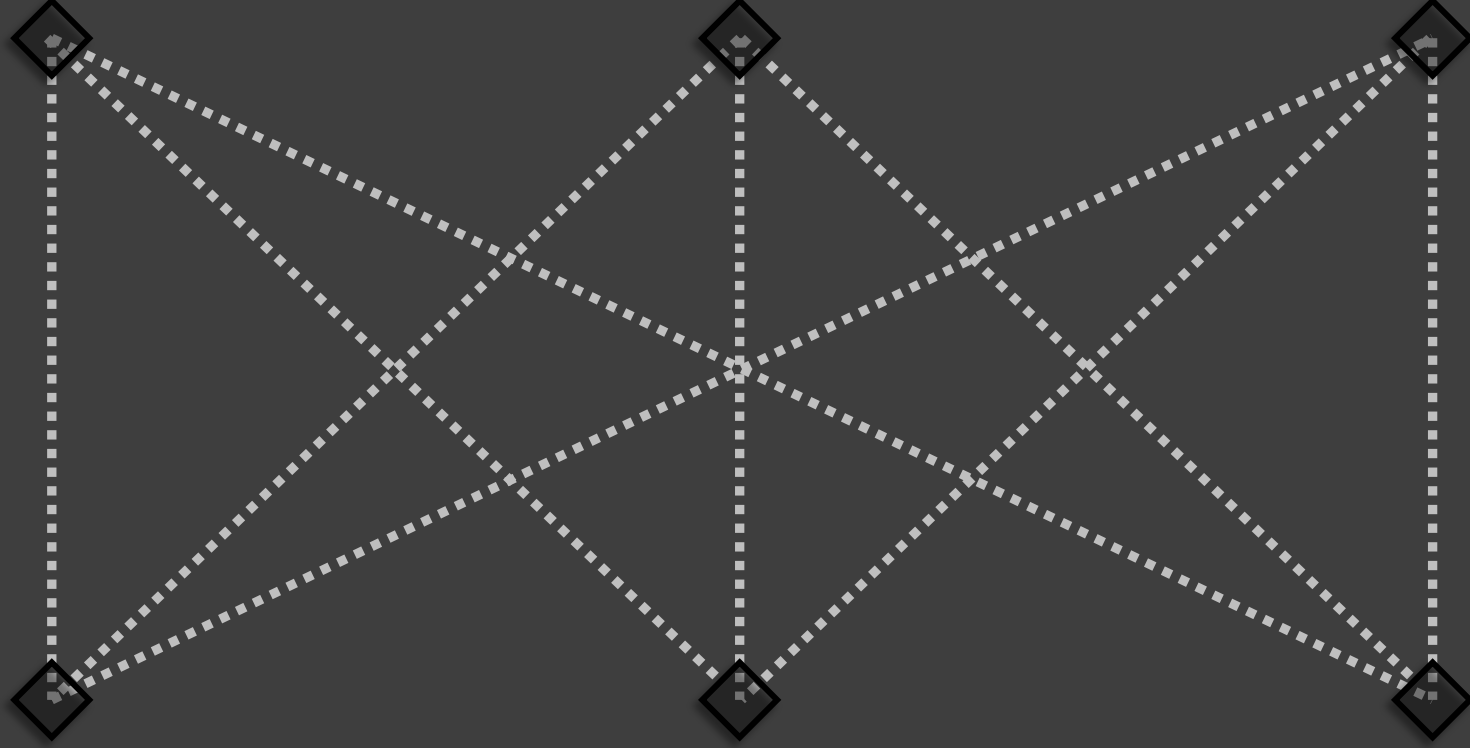














Espera: 20 minutos



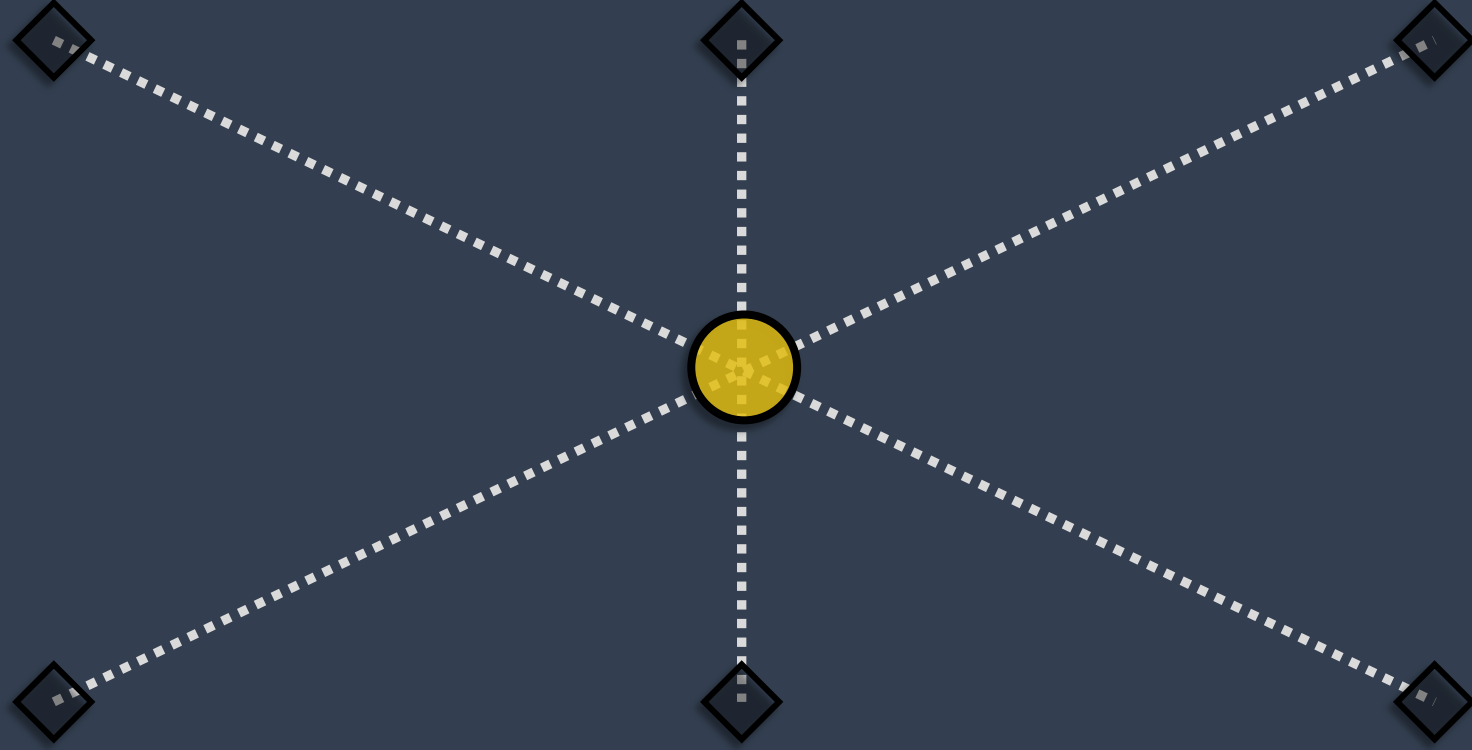
1 ônibus a cada 40 minutos

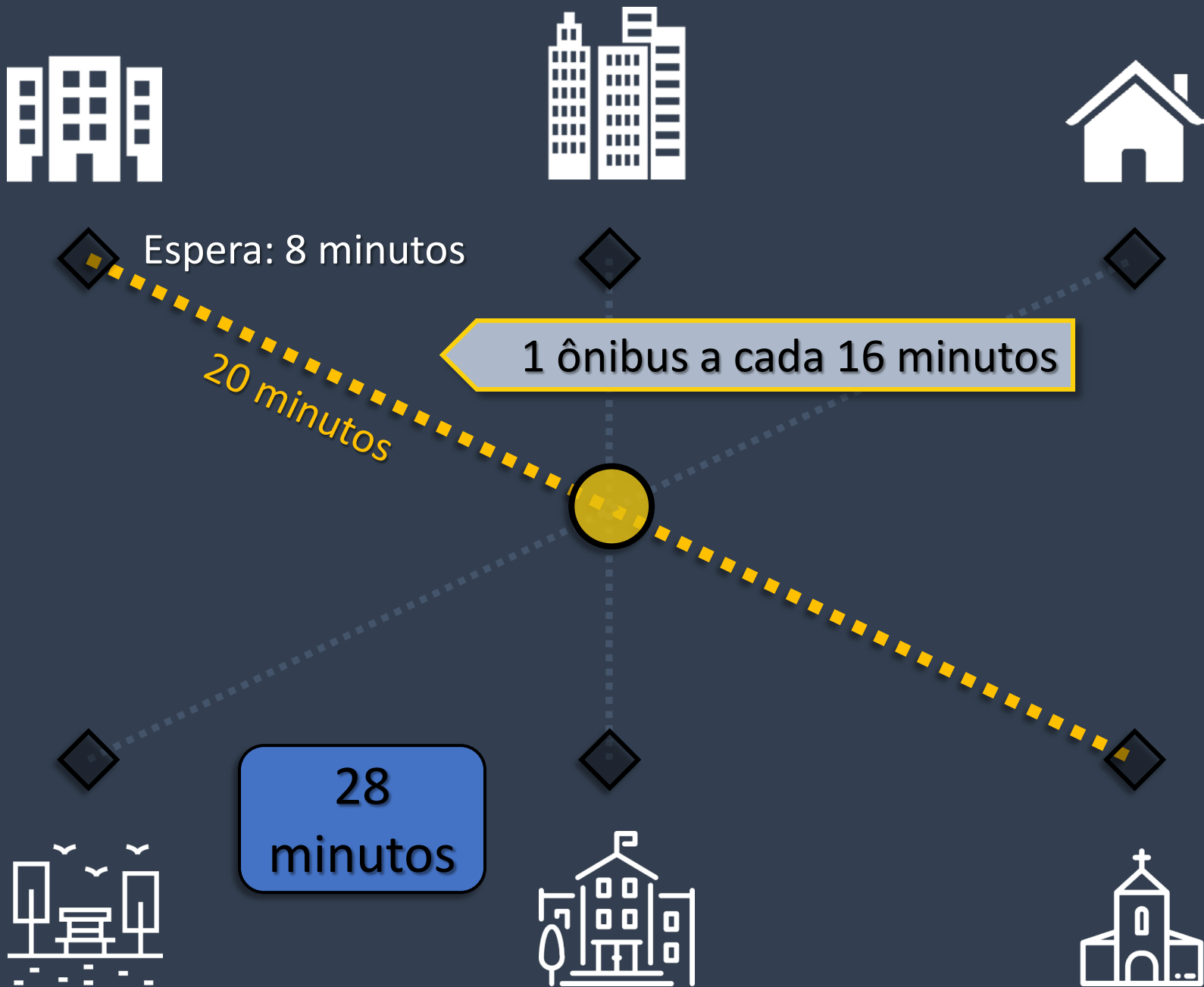
20 minutos

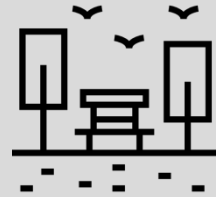


40 minutos

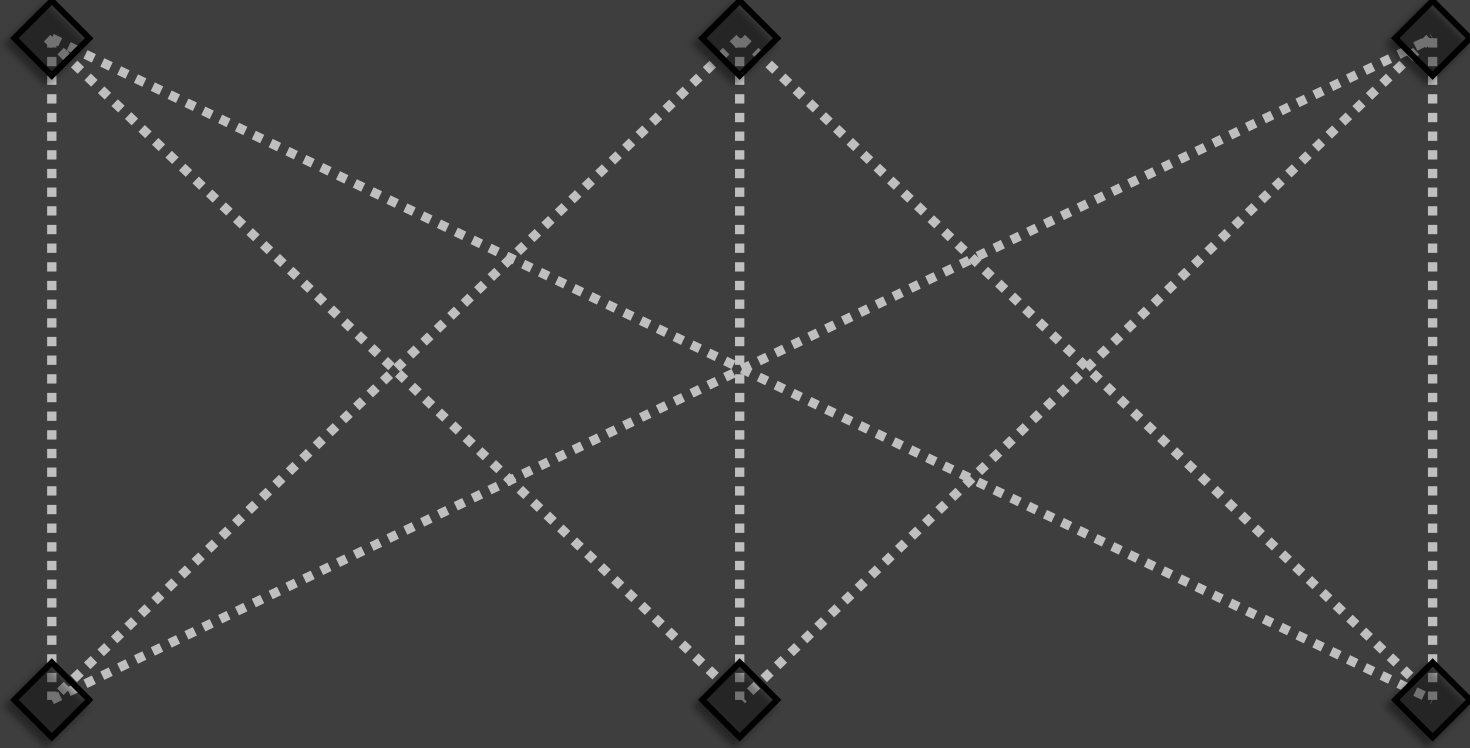


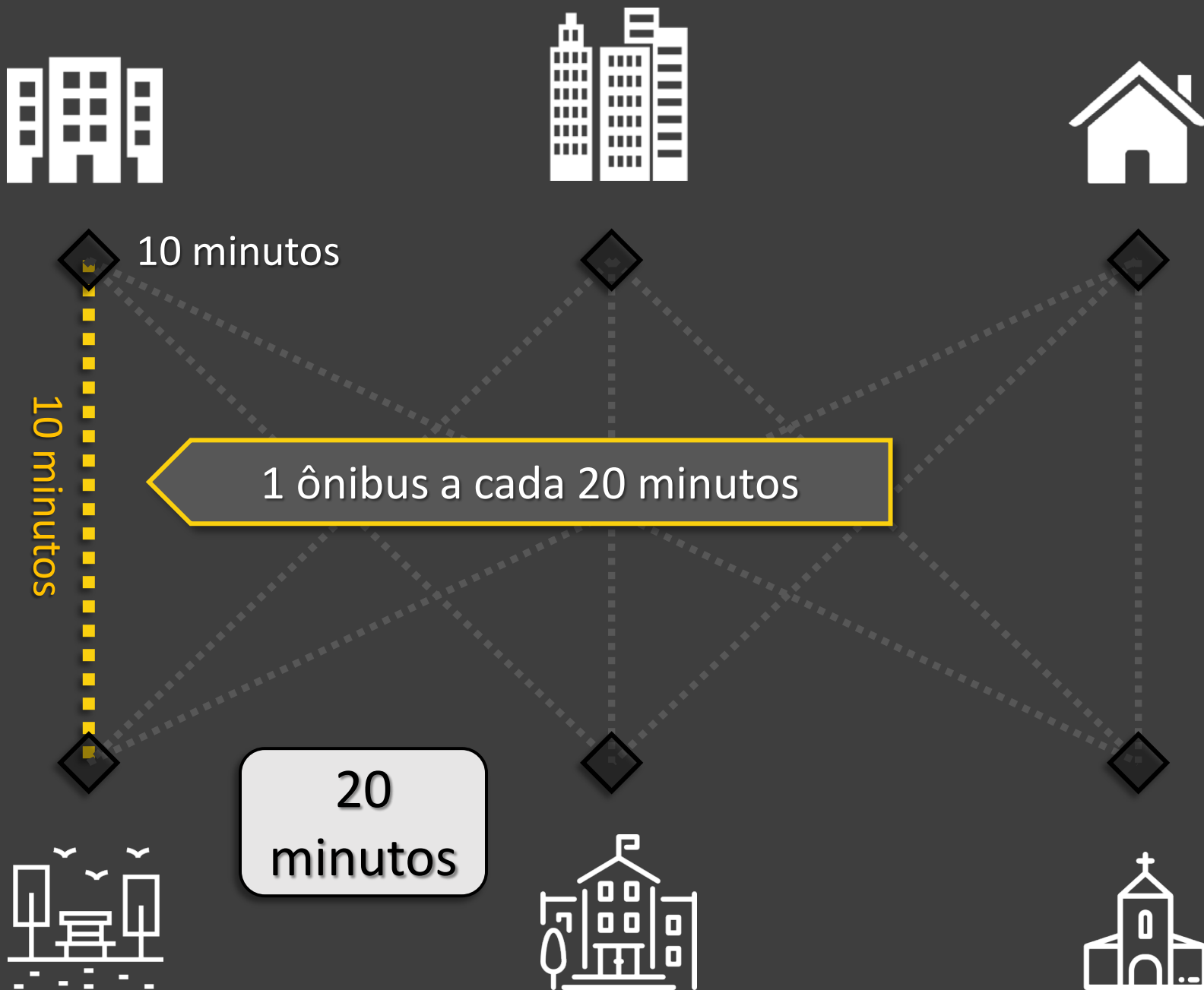












10 minutos

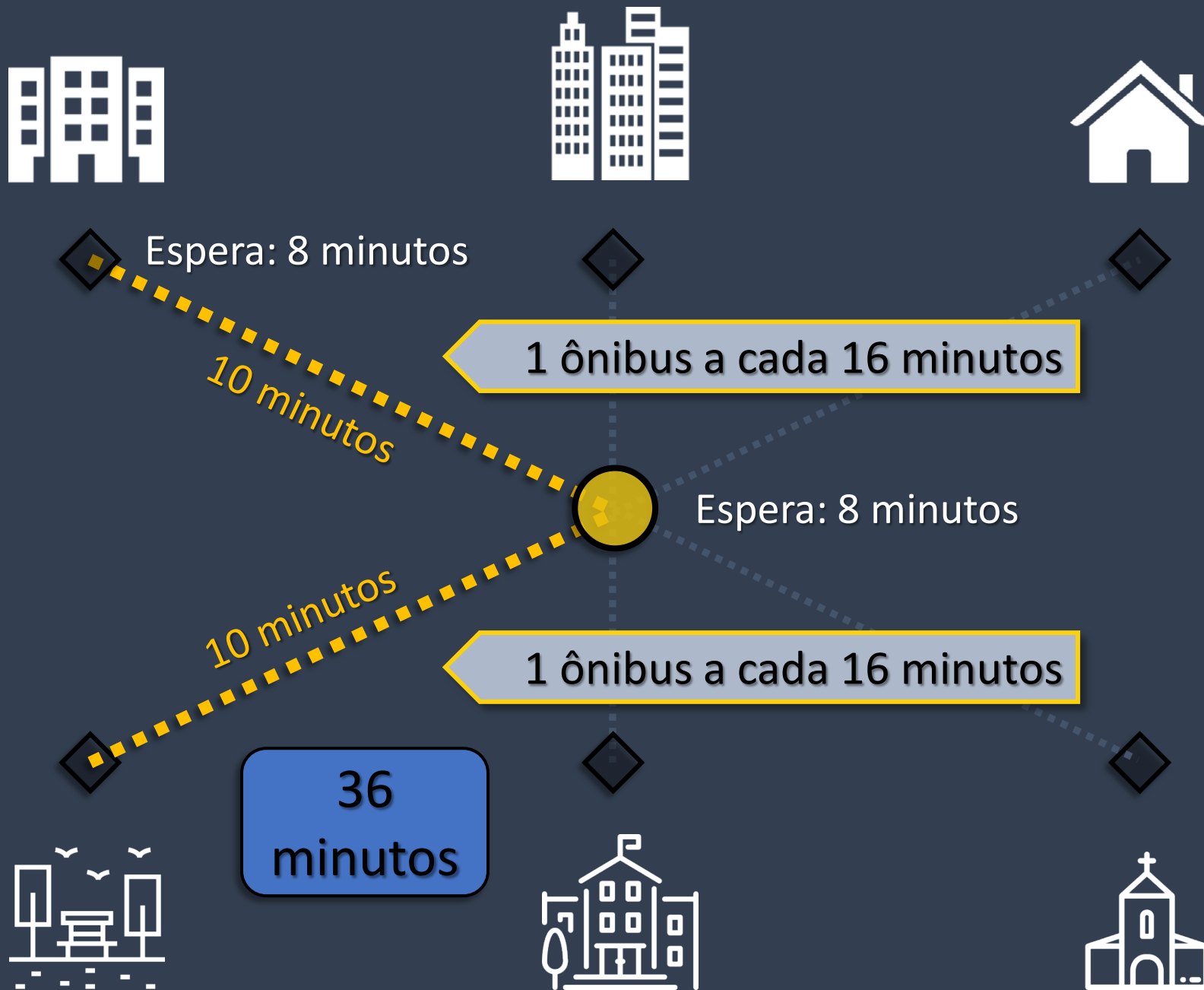
10 minutos

1 ônibus a cada 20 minutos

20 minutos





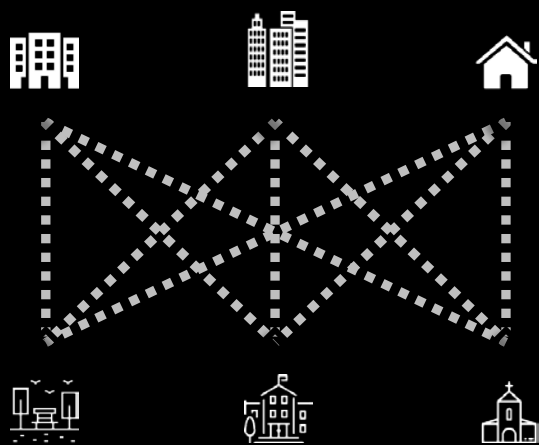


# SISTEMA TRONCO-ALIMENTADOR

- ✓ Mescla do sistema Direto com Conectado
- ✓ Conexões diretas entre pontos de maior demanda (Troncais)
- ✓ Conexões diretas entre pontos de menor demanda e Troncais
  - ✓ Conexões indiretas entre pontos de menor demanda

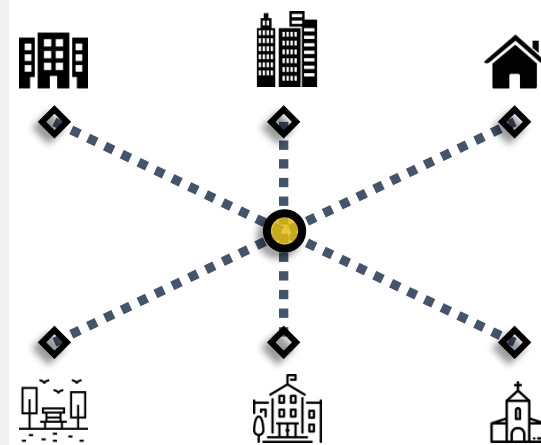


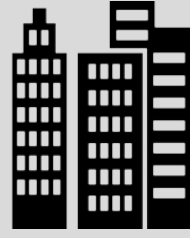
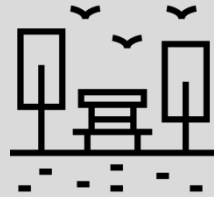
DIRETO



IDEAL

CONECTADO







Bairro 1



Bairro 2



Bairro 3



Comércio,  
Serviços,  
Empresas



Bairro 3

Parque



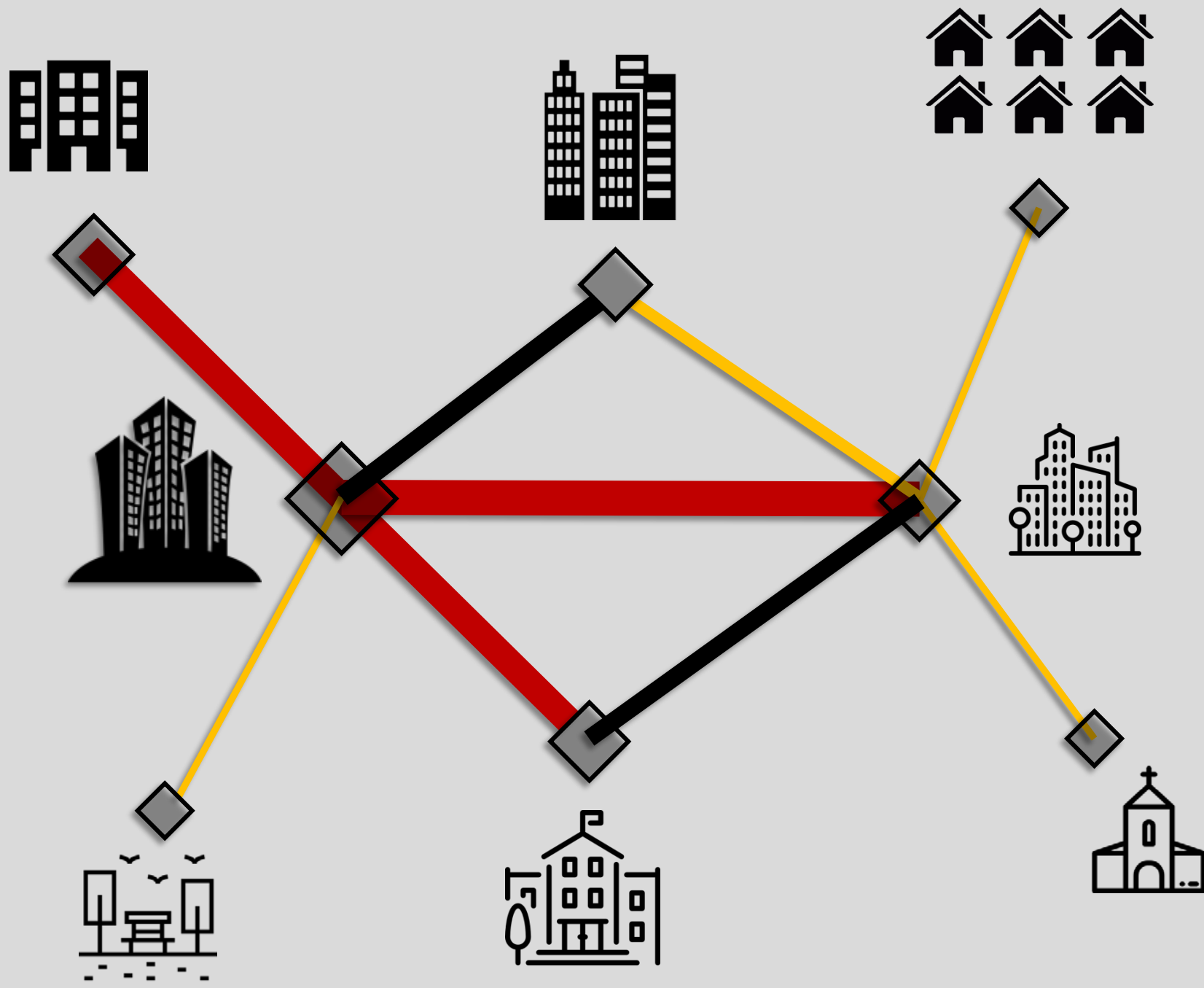
Universidade

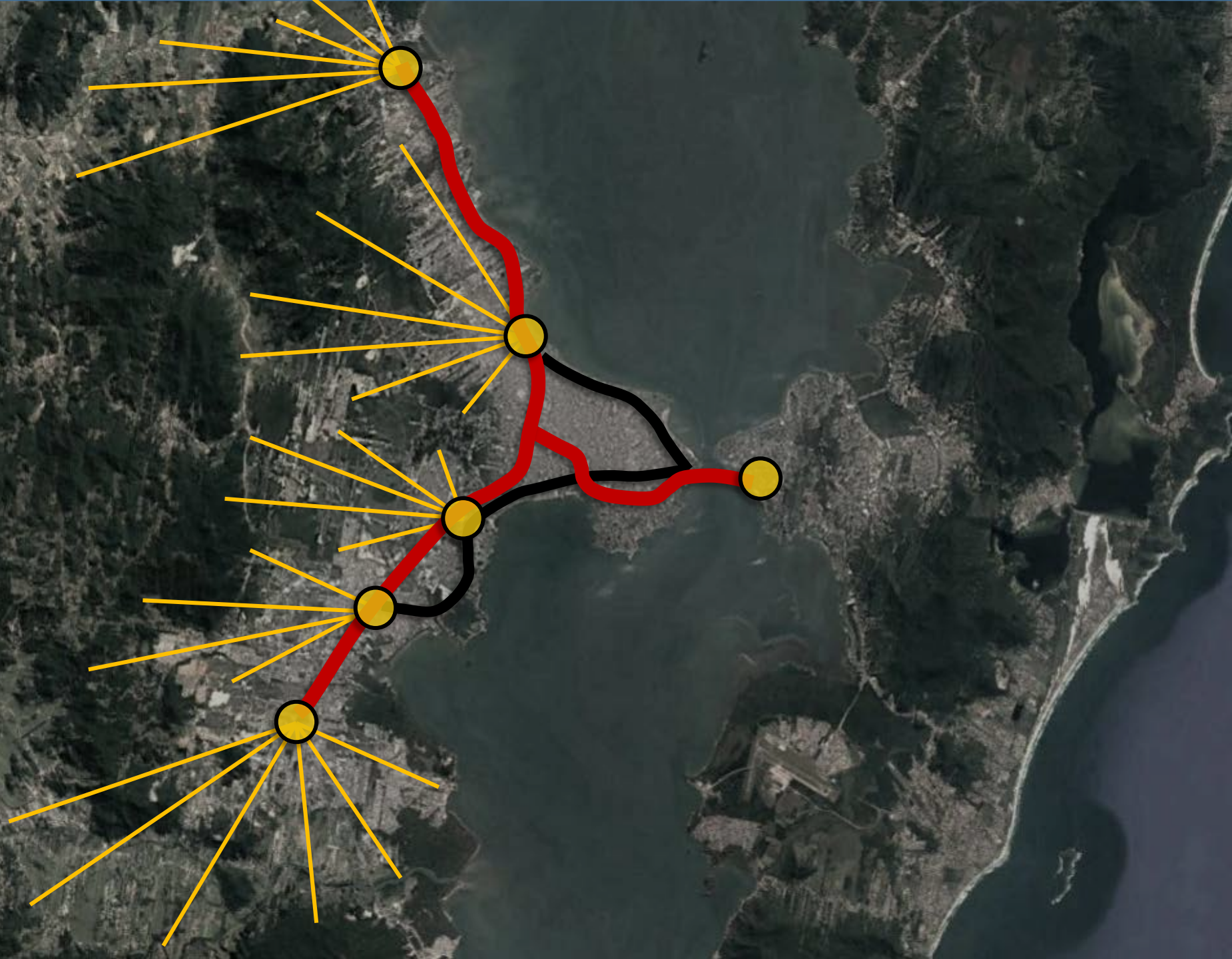


Centro  
Histórico









# NOVA REDE INTEGRADA DE TRANSPORTE COLETIVO METROPOLITANO

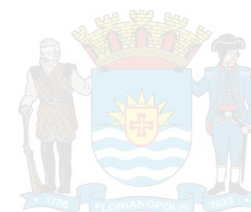
## MUNICÍPIO DE PALHOÇA



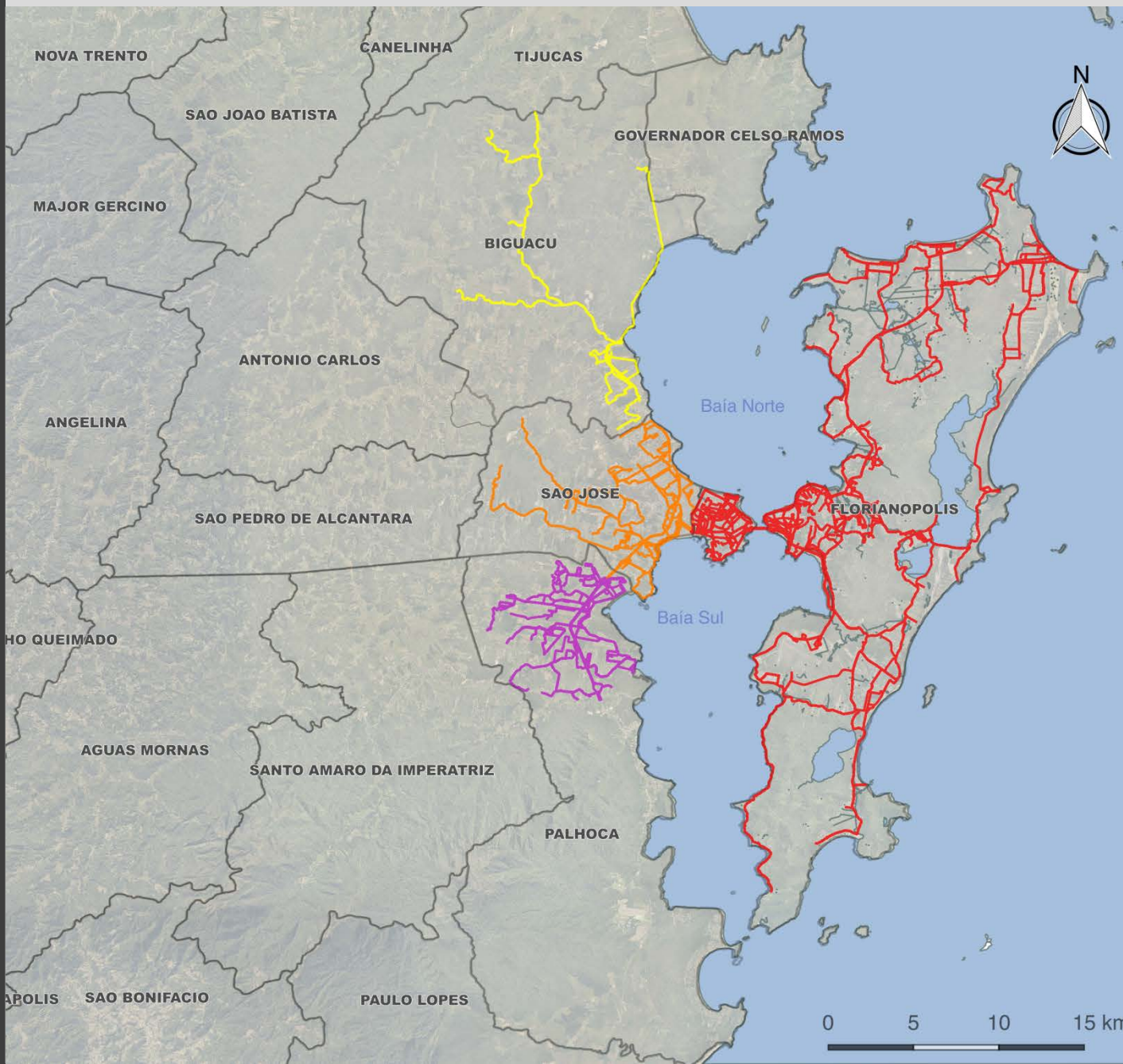
# CARACTERÍSTICA GERAIS

# REGIÃO METROPOLITANA DE FLORIANÓPOLIS









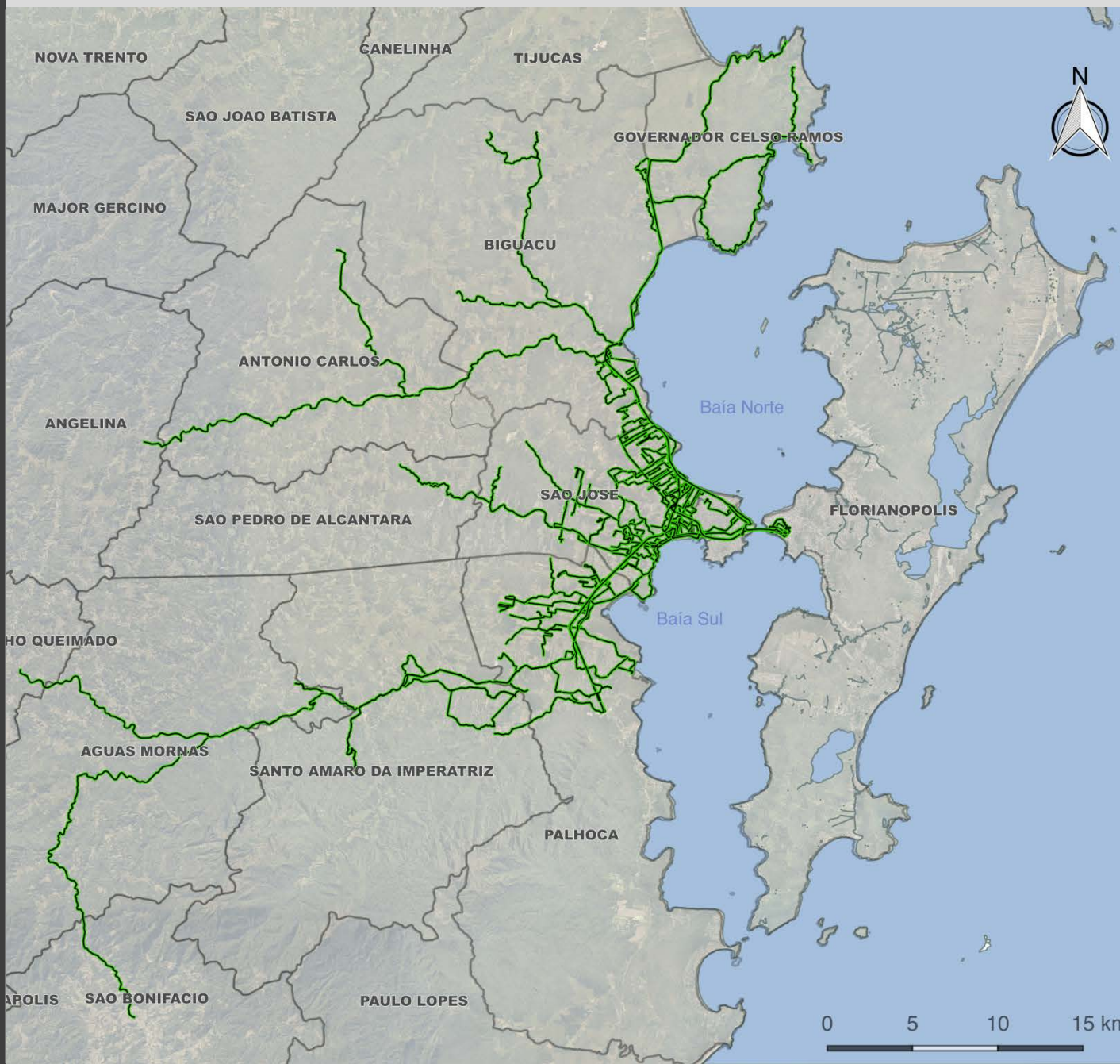
# SITUAÇÃO ATUAL - SISTEMAS MUNICIPAIS



## ROTAS DE ÔNIBUS

-  BIGUAÇU
-  FLORIANÓPOLIS
-  PALHOÇA
-  SÃO JOSÉ

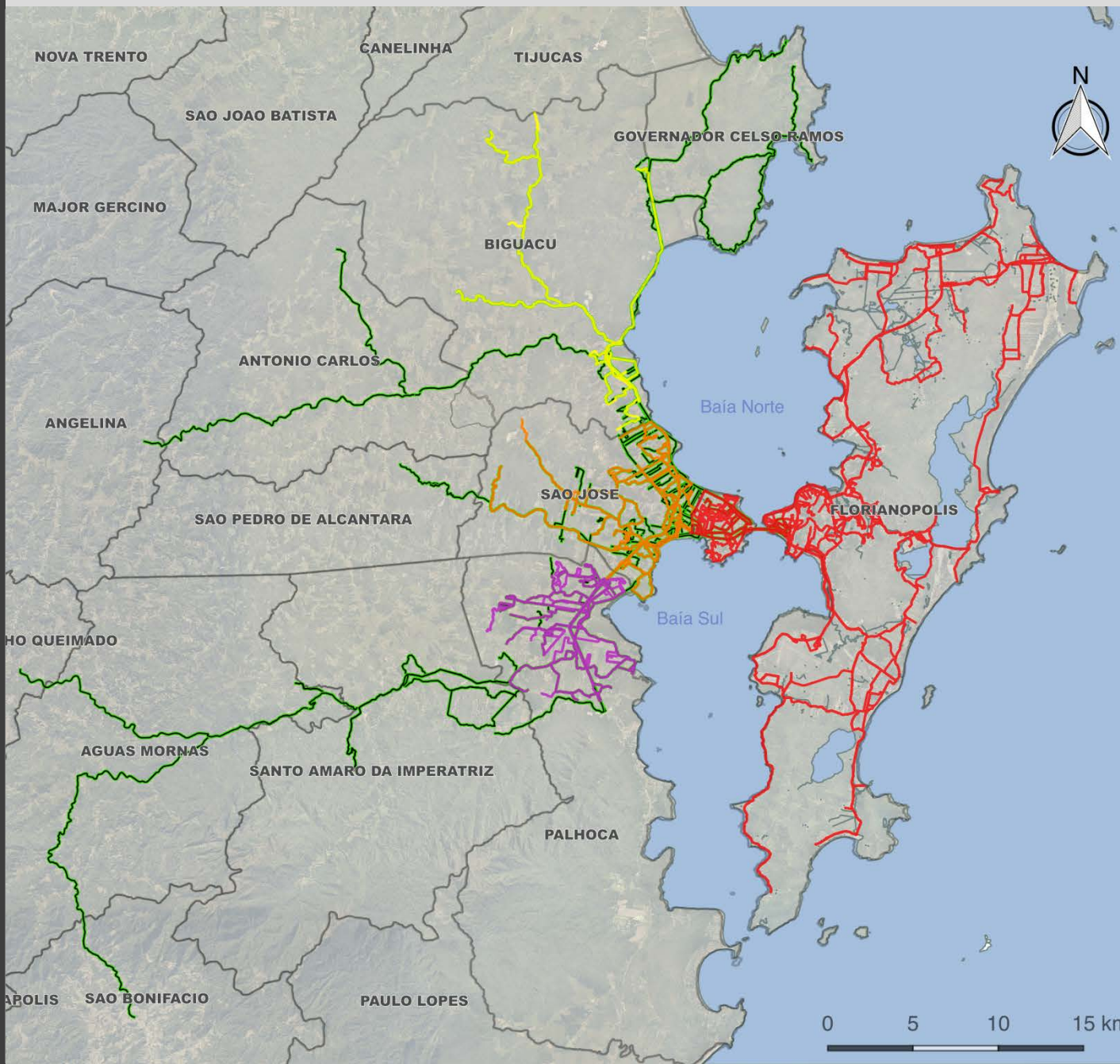
# SITUAÇÃO ATUAL - SISTEMA INTERMUNICIPAL



ROTAS DE ÔNIBUS  
— INTERMUNICIPAL




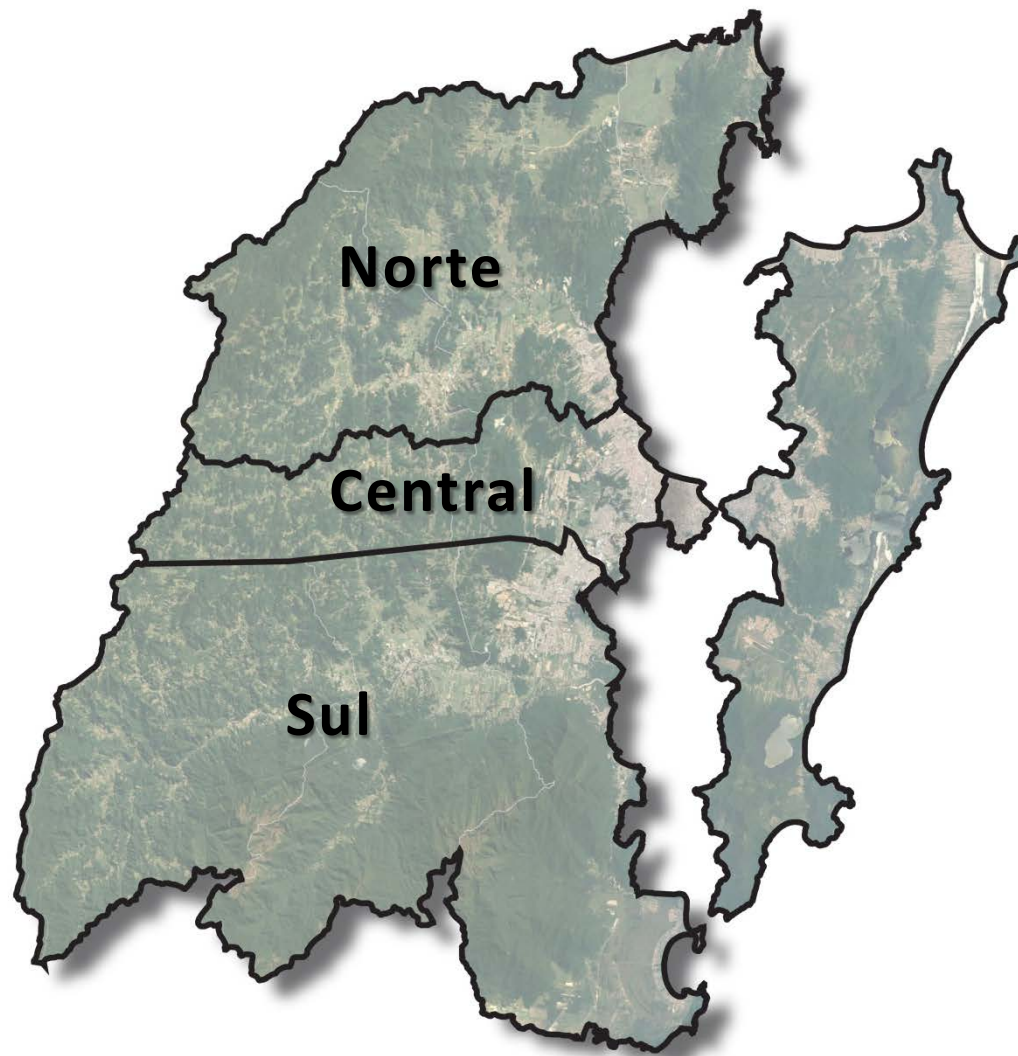
# SITUAÇÃO ATUAL - SOBREPOSIÇÃO DOS SISTEMAS






## ROTAS DE ÔNIBUS

- INTERMUNICIPAL
- BIGUAÇU
- FLORIANÓPOLIS
- PALHOÇA
- SÃO JOSÉ

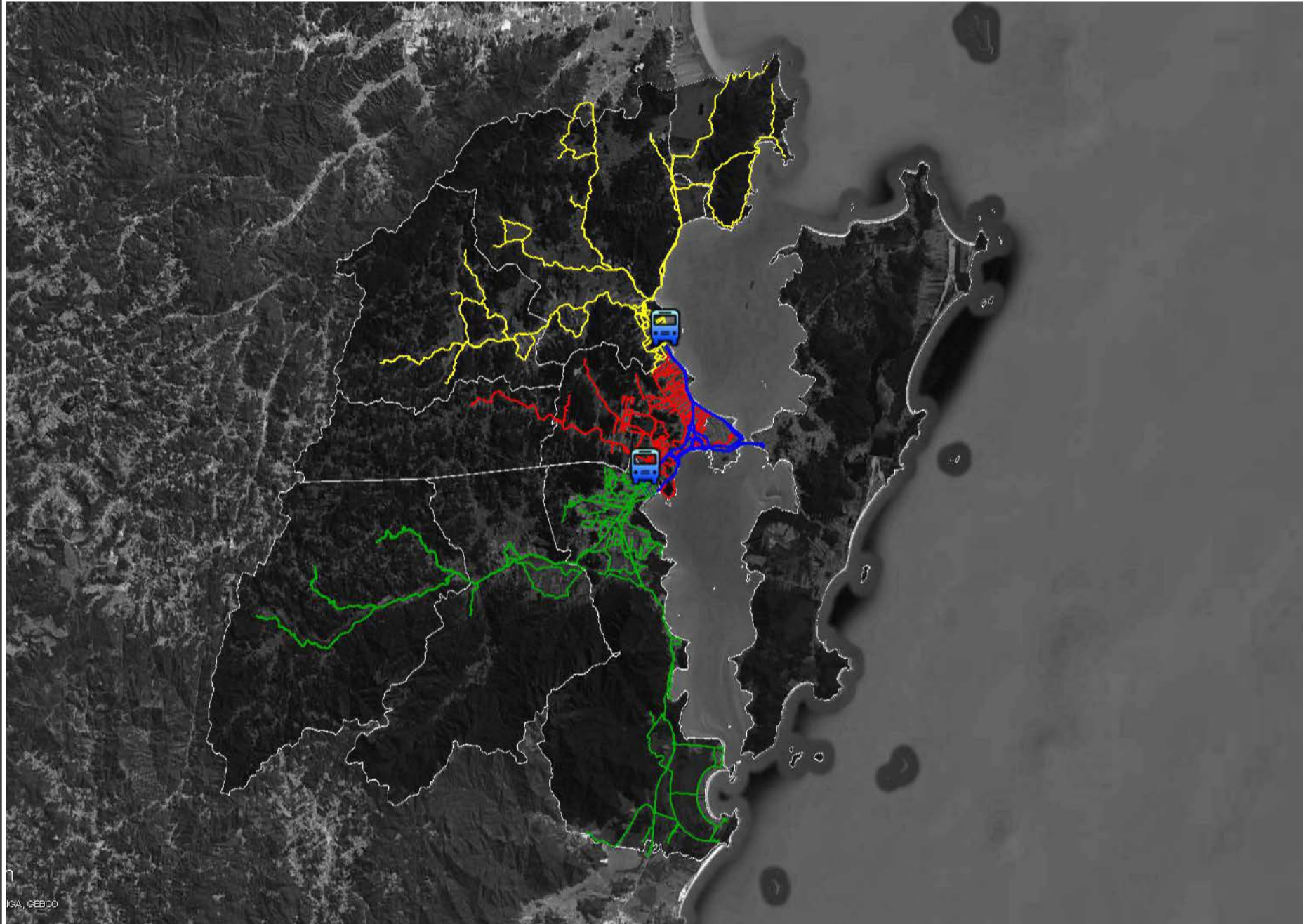
  	N O R T E
 	C E N T R A L



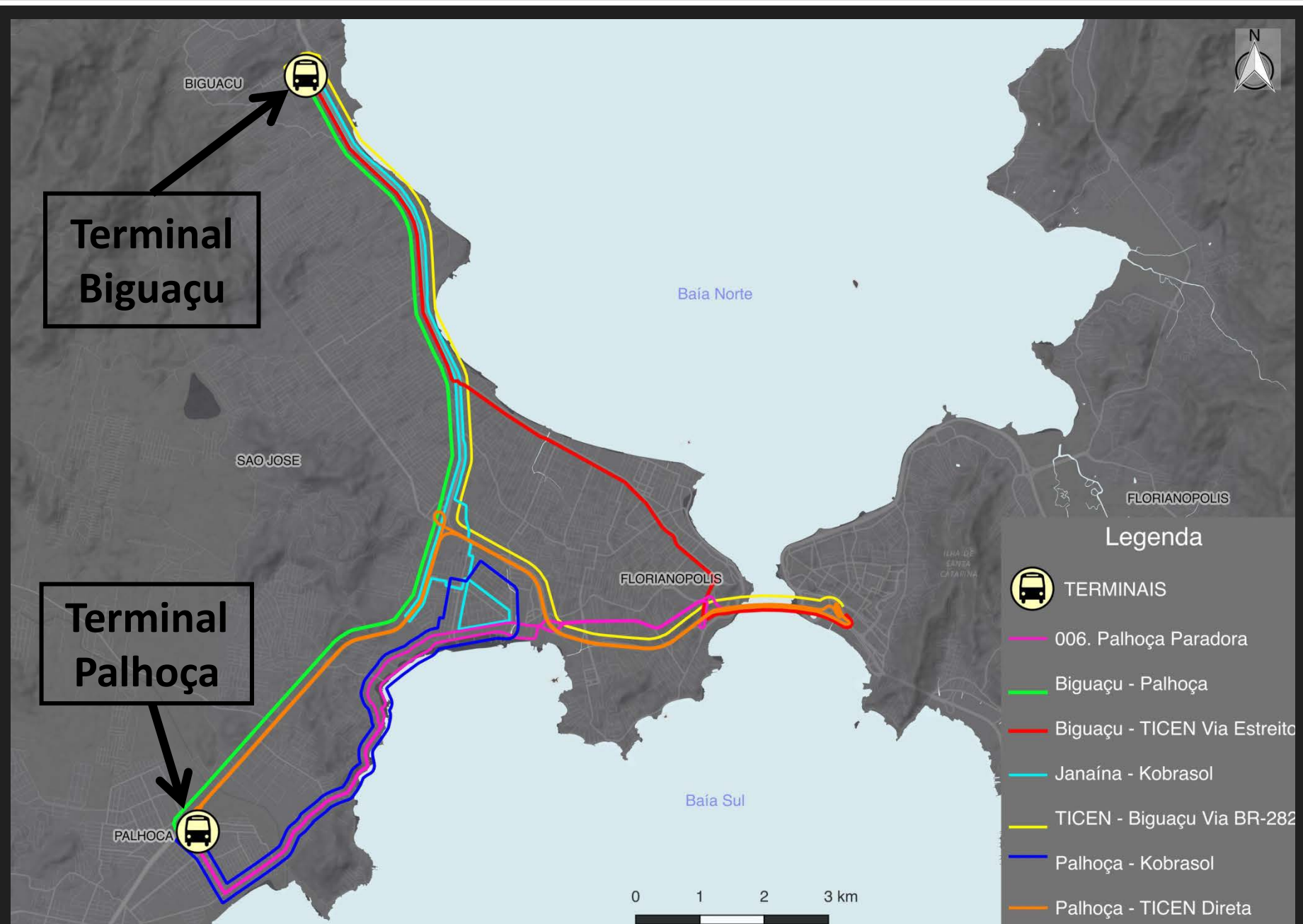
S U L	  
-------------	--

# NOVA REDE INTEGRADA METROPOLITANA – ESTRUTURA

18.09.2017 - Apresentação Pública – Palhoça



# TERMINAIS E CORREDORES DE TRANSPORTE COLETIVO



# REDE DE LINHAS

- 1** REFORÇAR SERVIÇOS MUNICIPAIS
- 2** FACILITAR ACESSO AO CENTRO
- 3** REVER ITINERÁRIOS – MELHORAR ATENDIMENTO POPULACIONAL
- 4** INTEGRAÇÃO TEMPORAL NO CENTRO E NOS BAIROS

## Linhas Palhoça – Palhoça (40)

- Morro dos Quadros Oeste
- Alto Aririú
- Aririú
- Laranjeiras 1
- Laranjeiras 2
- Barra do Aririú 1
- Barra do Aririú 2
- Barra do Aririú Via Aririú 1
- Barra do Aririú Via Aririú 2
- Loteamento Miriam 1
- Loteamento Miriam 2
- Vila Nova / Nova Palhoça 1
- Vila Nova / Nova Palhoça 2
- Bela Vista 1
- Bela Vista 2
- Terra Nova
- Jardim Eldorado Circular 1
- Jardim Eldorado Circular 2
- Shopping Continente
- Guarda do Cubatão Via Aririú 1
- Guarda do Cubatão Via Aririú 2
- Morro dos Quadros Leste
- Guarda do Cubatão Via Aririú Formiga
- Frei Damião Circular 1
- Frei Damião Circular 2
- Loteamento Madri
- São Sebastião
- Morro do Gato
- Passa Vinte 1
- Passa Vinte 2
- Unisul
- Pedra Branca
- Unisul / IFSC
- IFSC Via Tecno Park
- IFSC Via Pagani
- Pinheira 1
- Pinheira 2
- Pinheira 3
- Enseada do Brito
- Pinheira / Praia de Fora

## Linhas Palhoça – São José, Biguaçu, Florianópolis (7)

- Centro Palhoça – Kobrasol
- Estação Palhoça – Kobrasol
- Estação Palhoça – Estação Biguaçu
- Palhoça – TICEN Via Hospital Regional
- Palhoça – TICEN Via Centro Histórico
- Palhoça – TICEN Via BR-282 Paradora
- Palhoça – TICEN Via BR-282 Direta



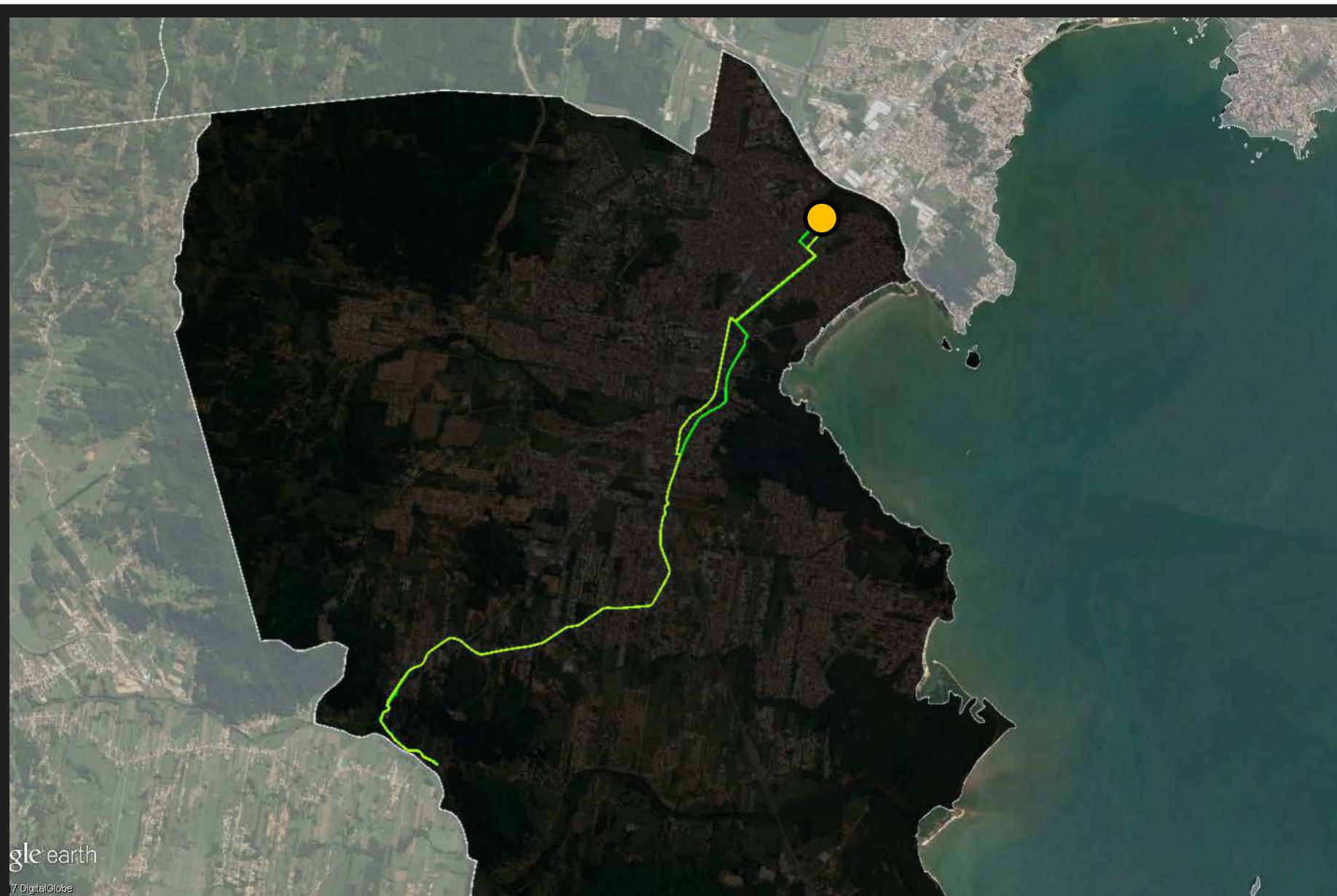
## Serviços: 100+

### DIRETOS

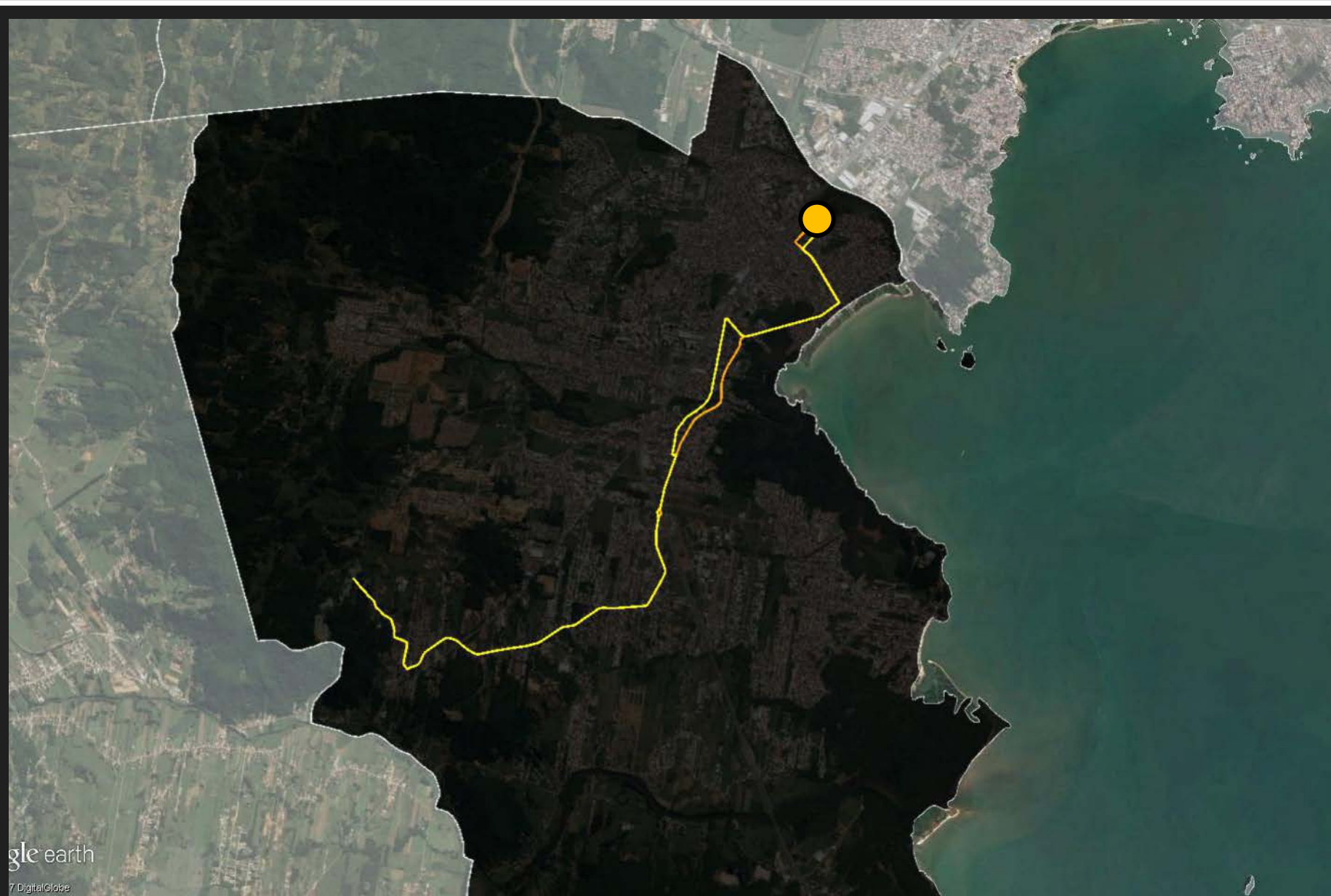
- Palhoça - Palhoça
- Palhoça – São José
- Palhoça – Biguaçu
- Palhoça – Florianópolis
- Palhoça – Santo Amaro
- Palhoça – Águas Mornas

### INTEGRADOS

- Palhoça - Palhoça
- Palhoça – São José
- Palhoça – Biguaçu
- Palhoça – Florianópolis
- Palhoça – Santo Amaro
- Palhoça – Águas Mornas
- Palhoça – Antônio Carlos
- Palhoça – Gov. Celso Ramos
- Palhoça – São Pedro de Alcântara



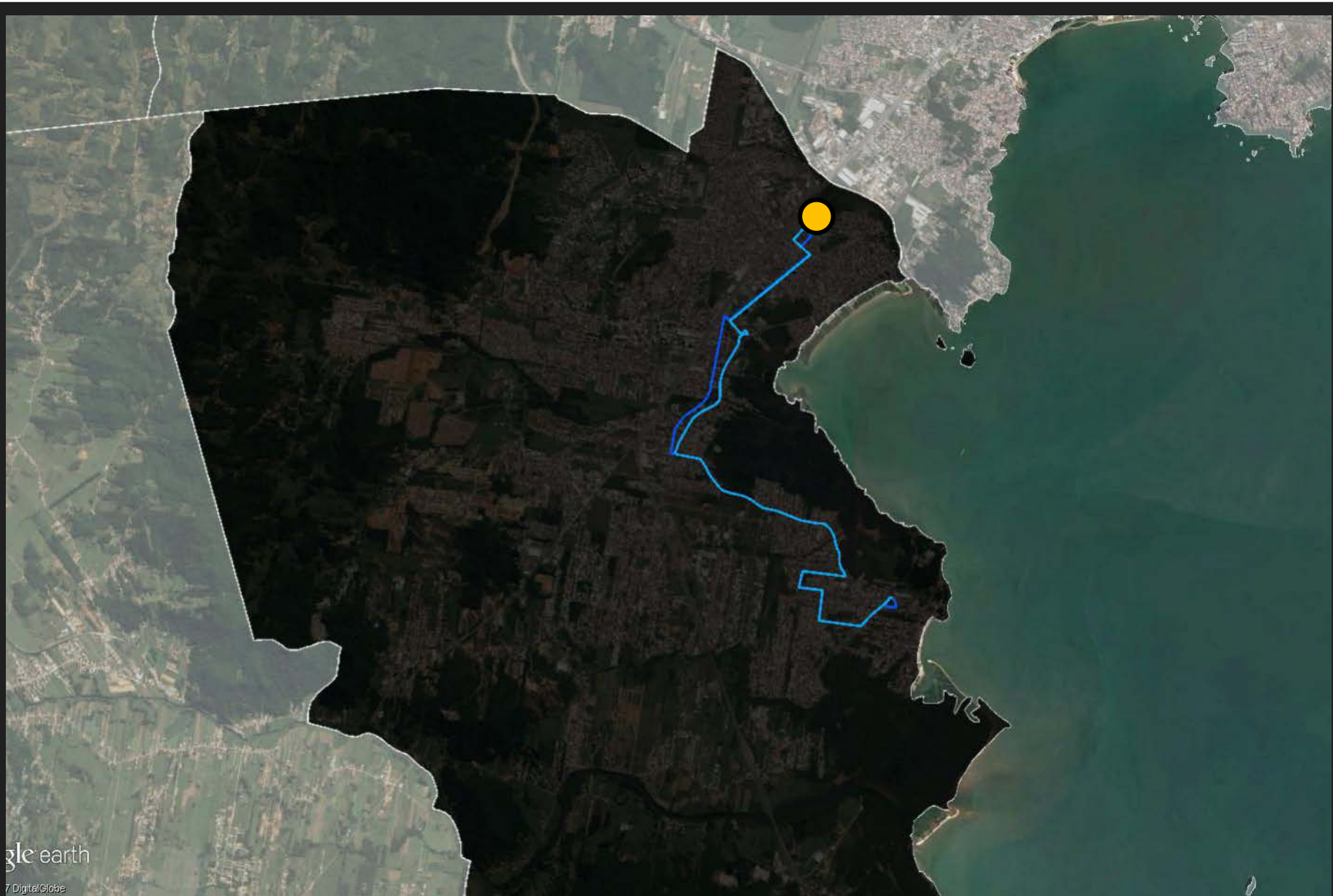
Morro dos Quadros Oeste



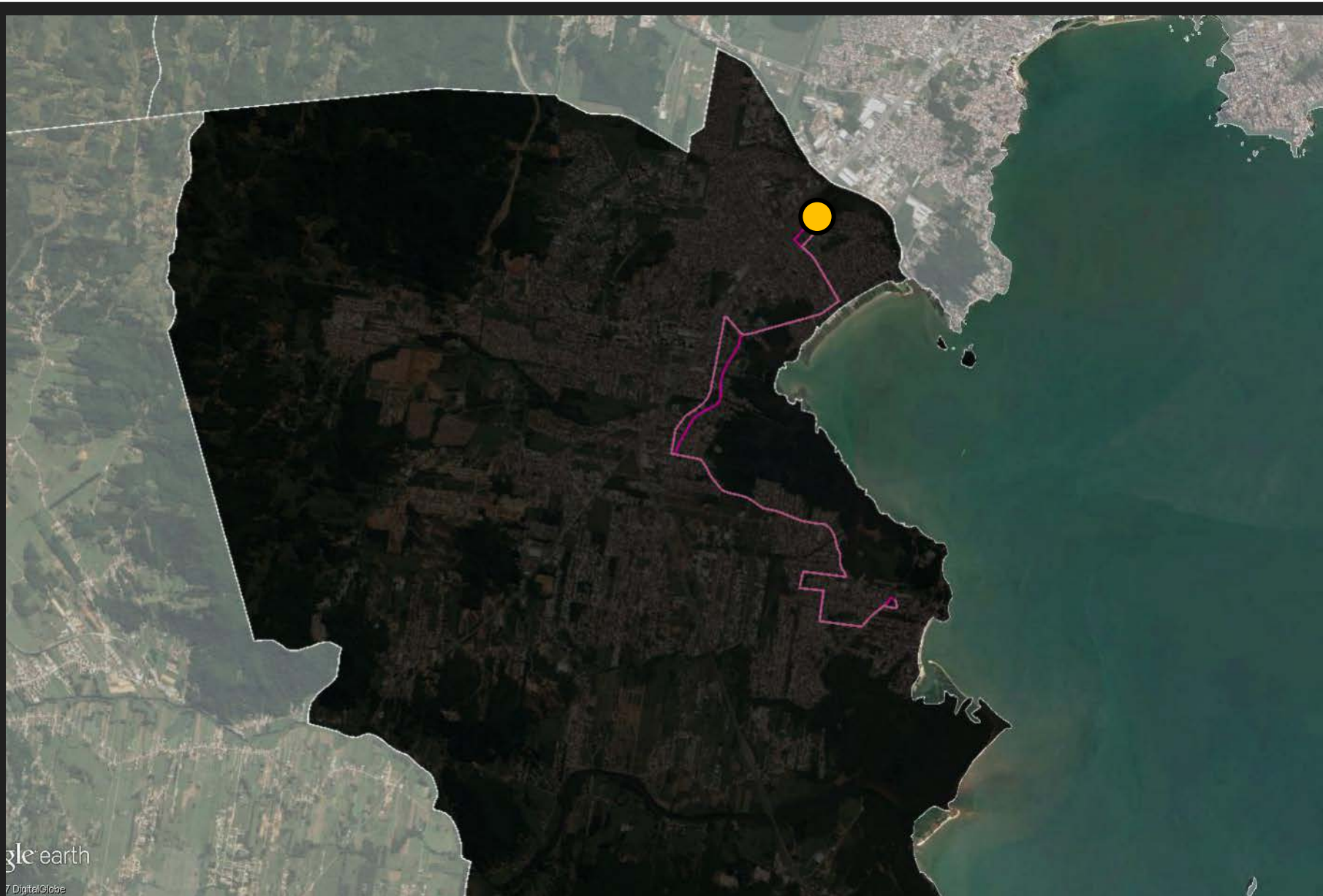
Alto Aririú



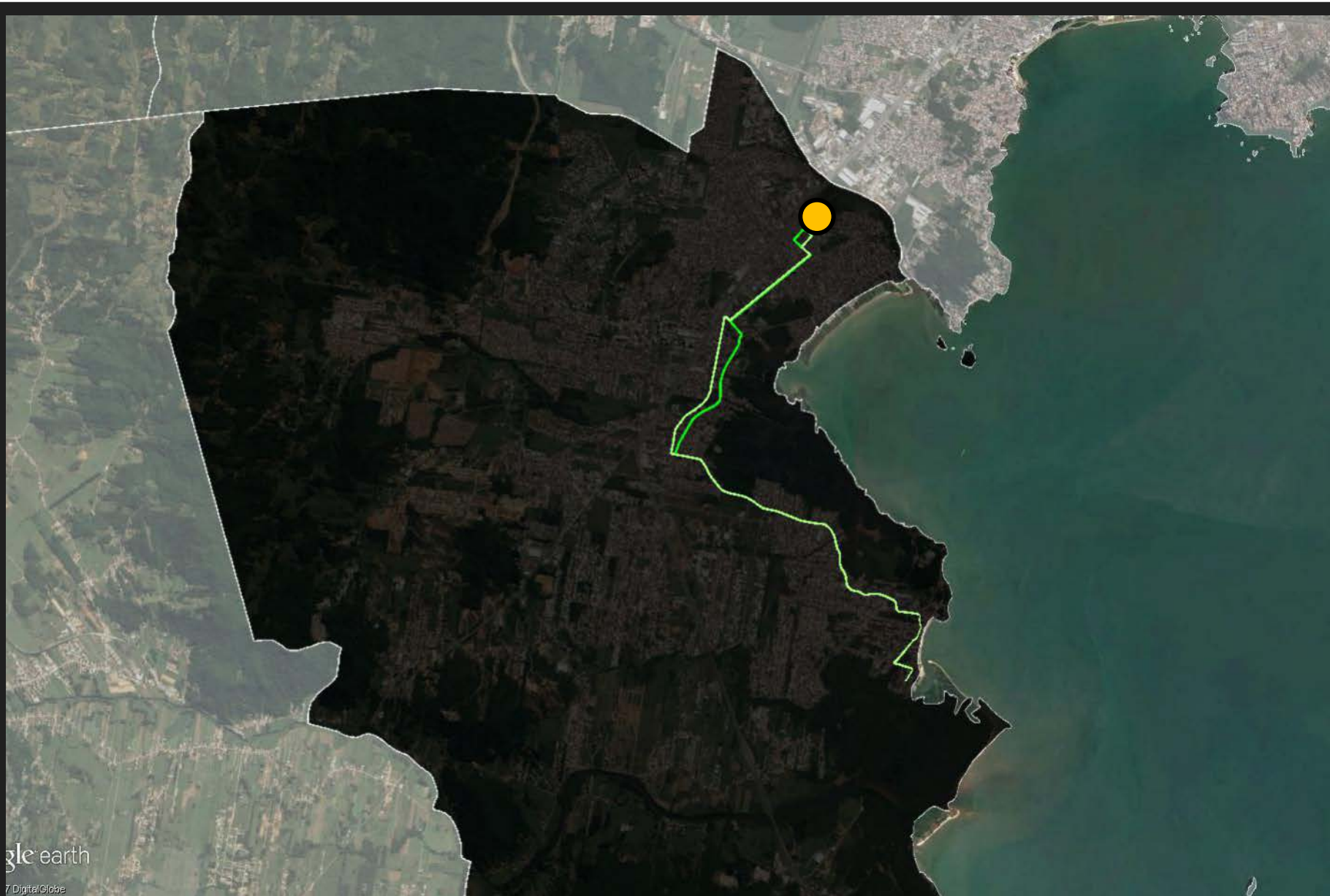
Aririú



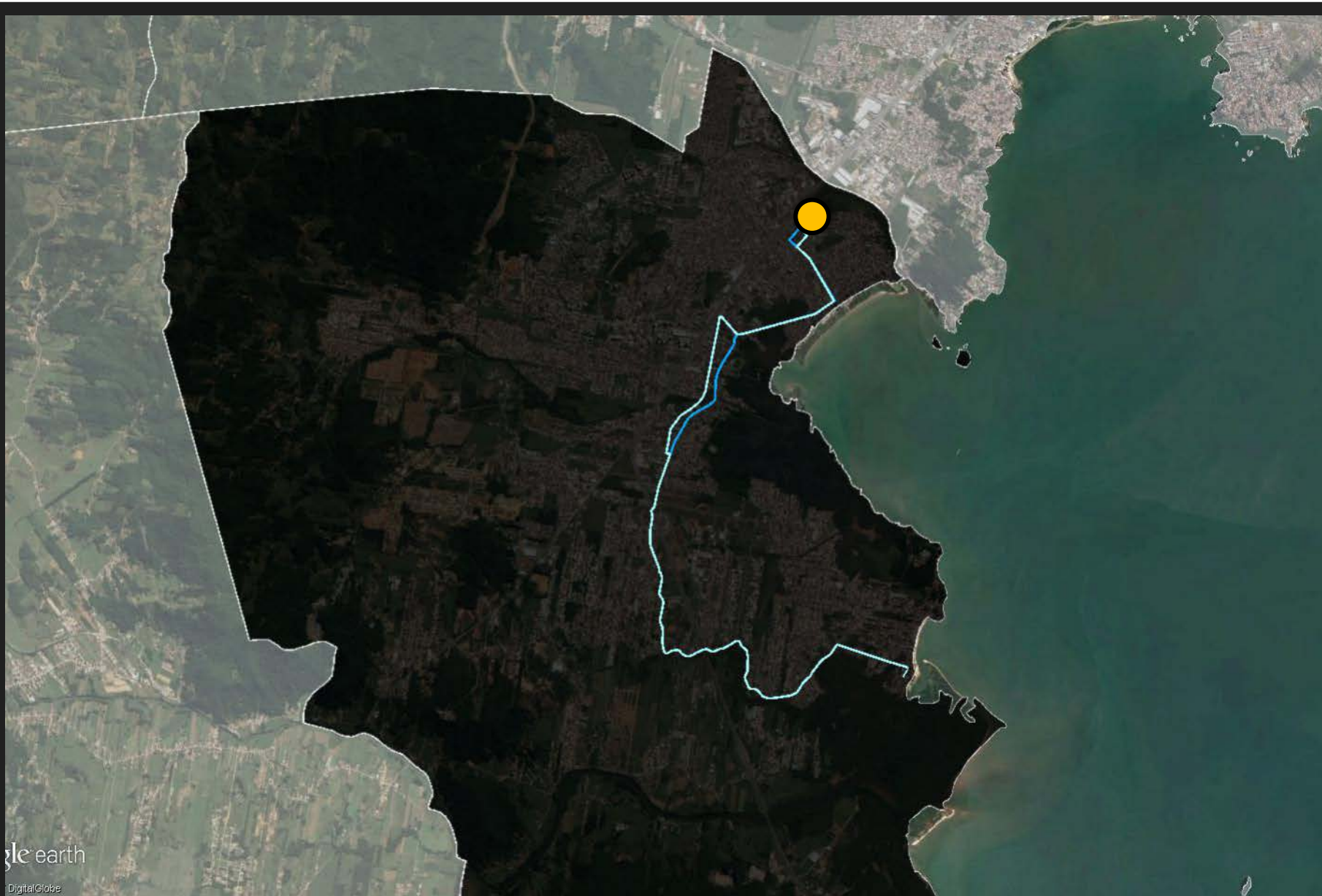
Laranjeiras Via Elza Lucchi



Laranjeiras Via Aniceto Zacchi

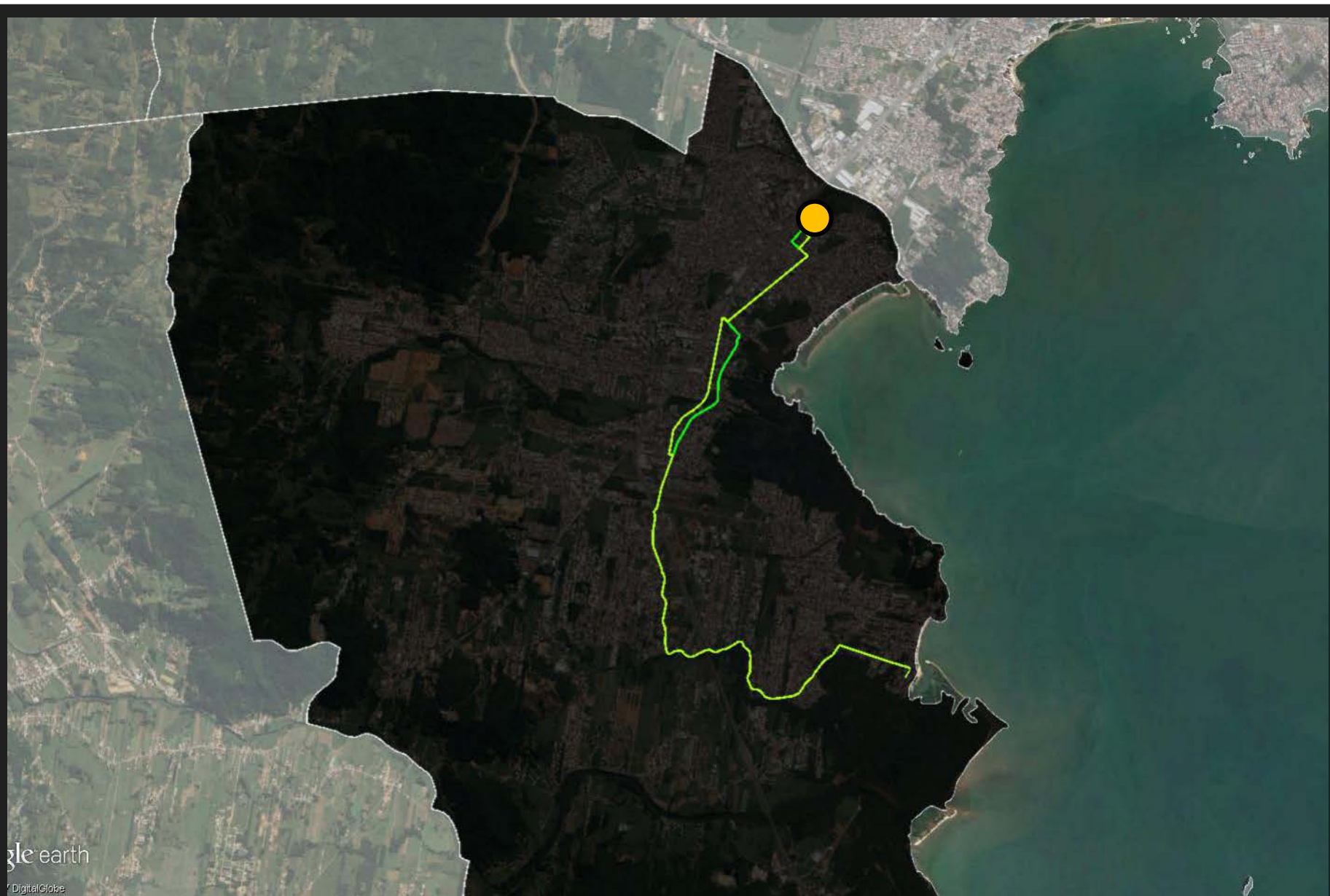


Barra do Aririú Via Rio Grande / Elza Lucchi



Barra do Aririú Via Rio Grande / Aniceto Zacchi

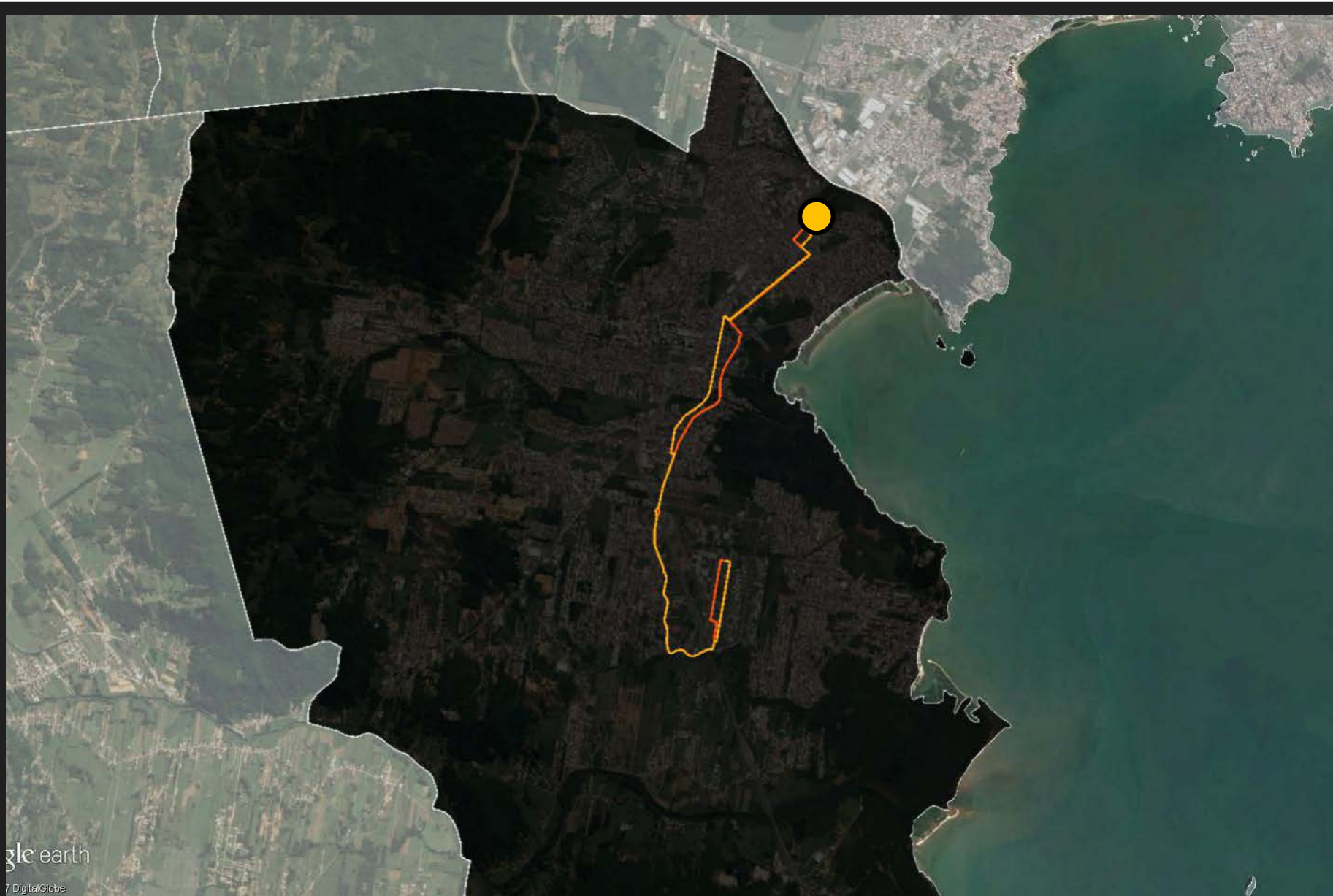




Barra do Aririú Via Aririú - Elza Lucchi



Barra do Aririú Via Aririú - Aniceto Zacchi



Loteamento Miriam Via Elza Lucchi



Loteamento Miriam Via Aniceto Zacchi



gle earth  
7 DigitalGlobe

Vila Nova / Nova Palhoça Via Elza Lucchi

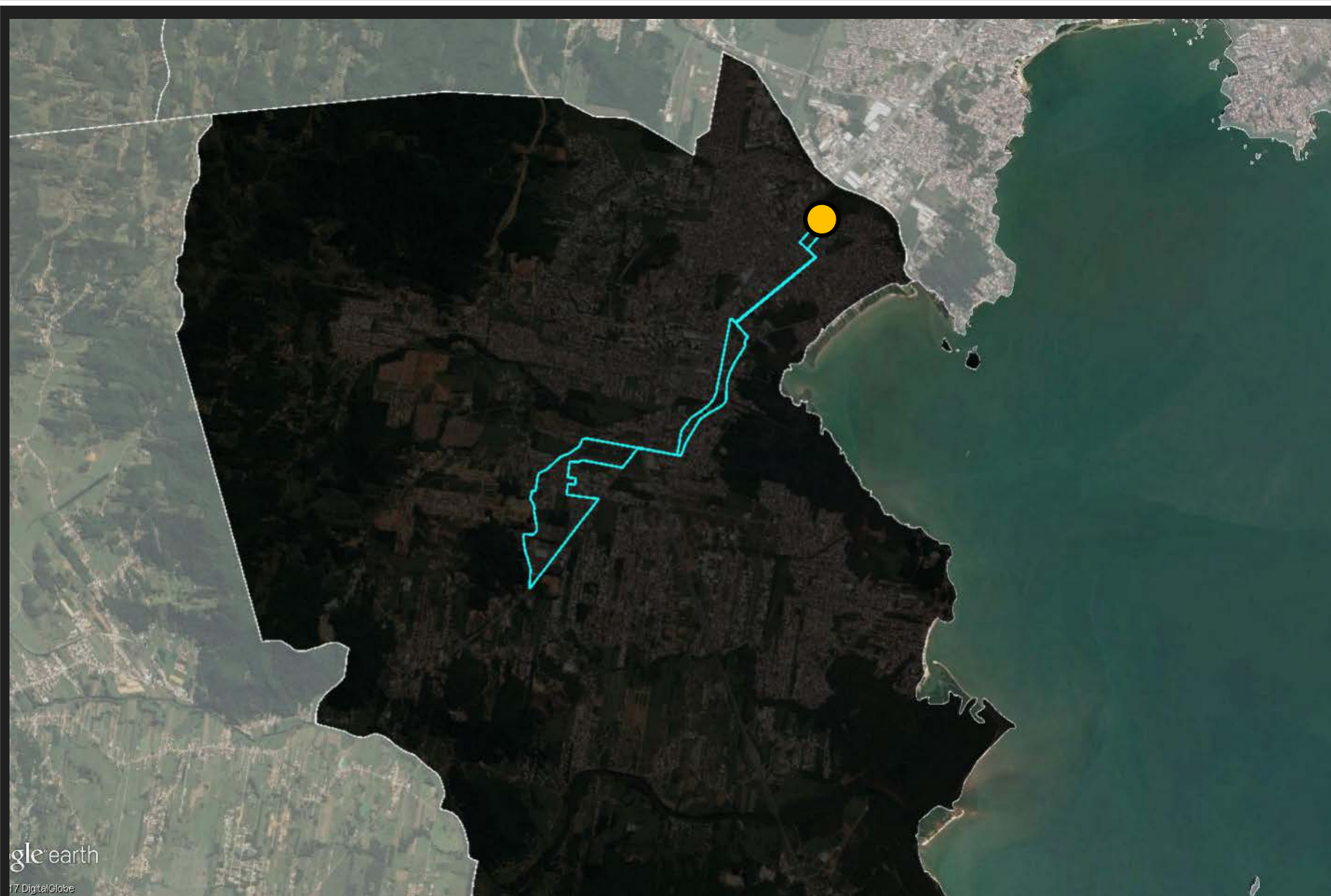


Vila Nova / Nova Palhoça Via Aniceto Zacchi



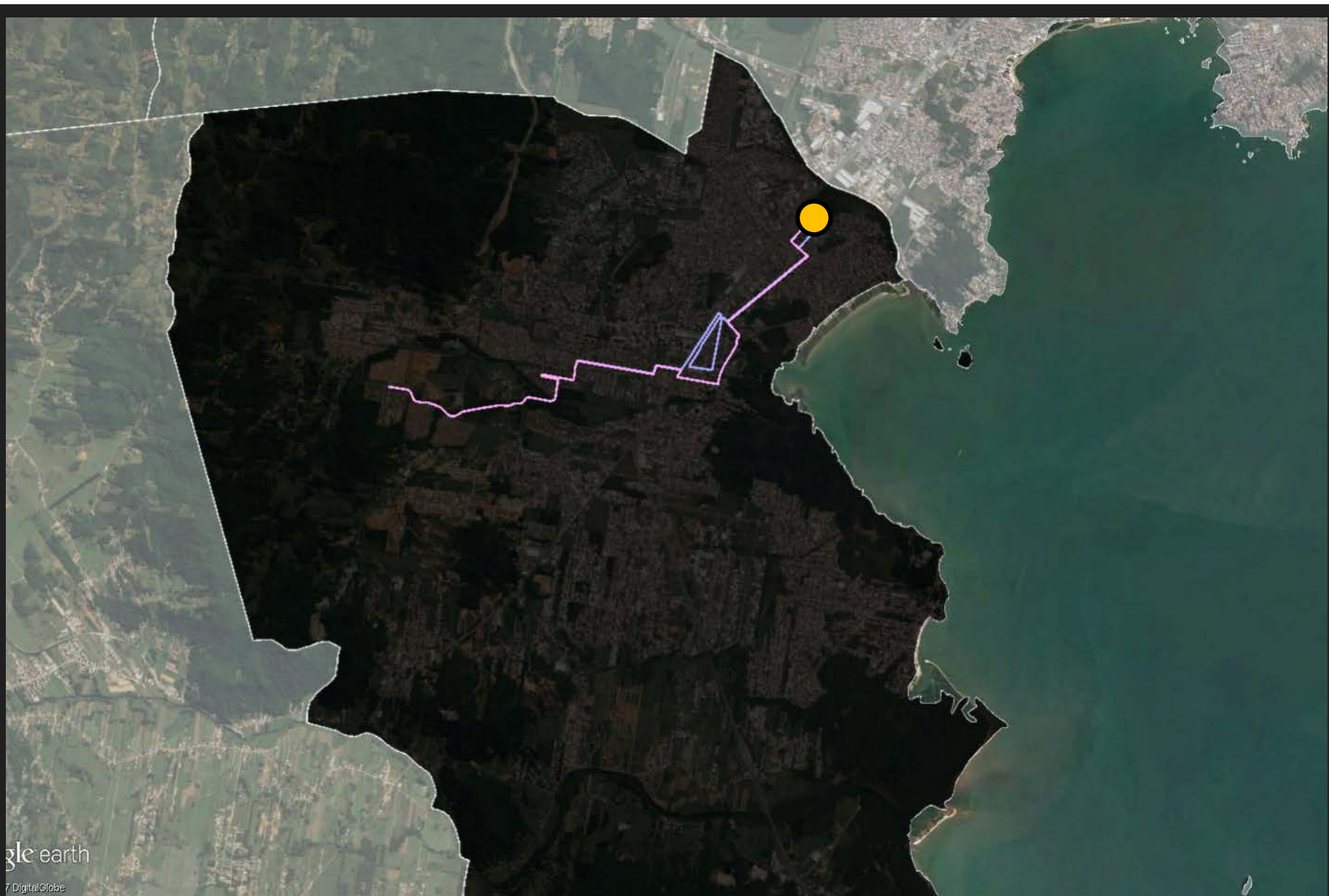
gle earth  
7 DigitalGlobe

Bela Vista 1



Bela Vista 2





Google Earth  
© 2017 DigitalGlobe

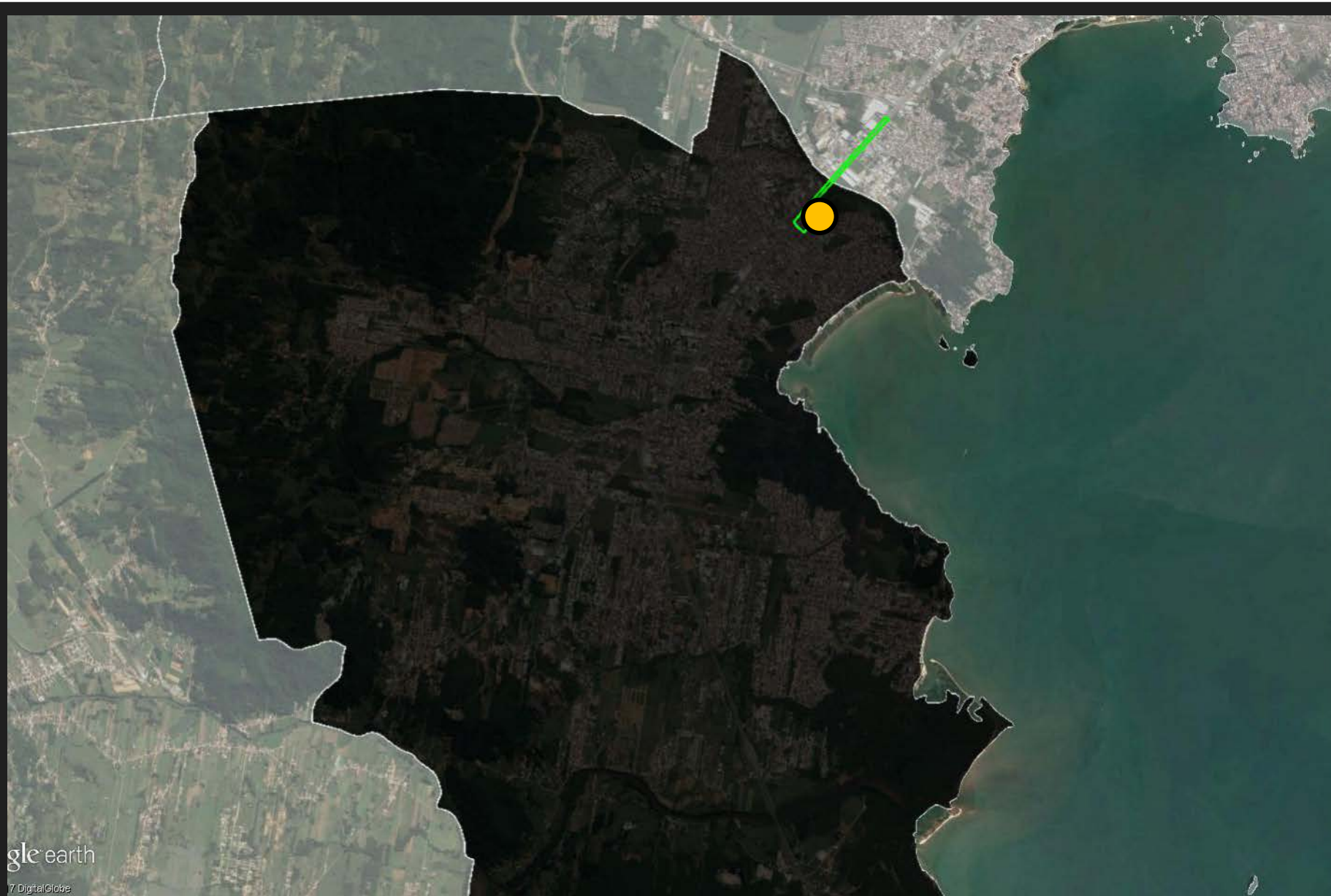
Terra Nova



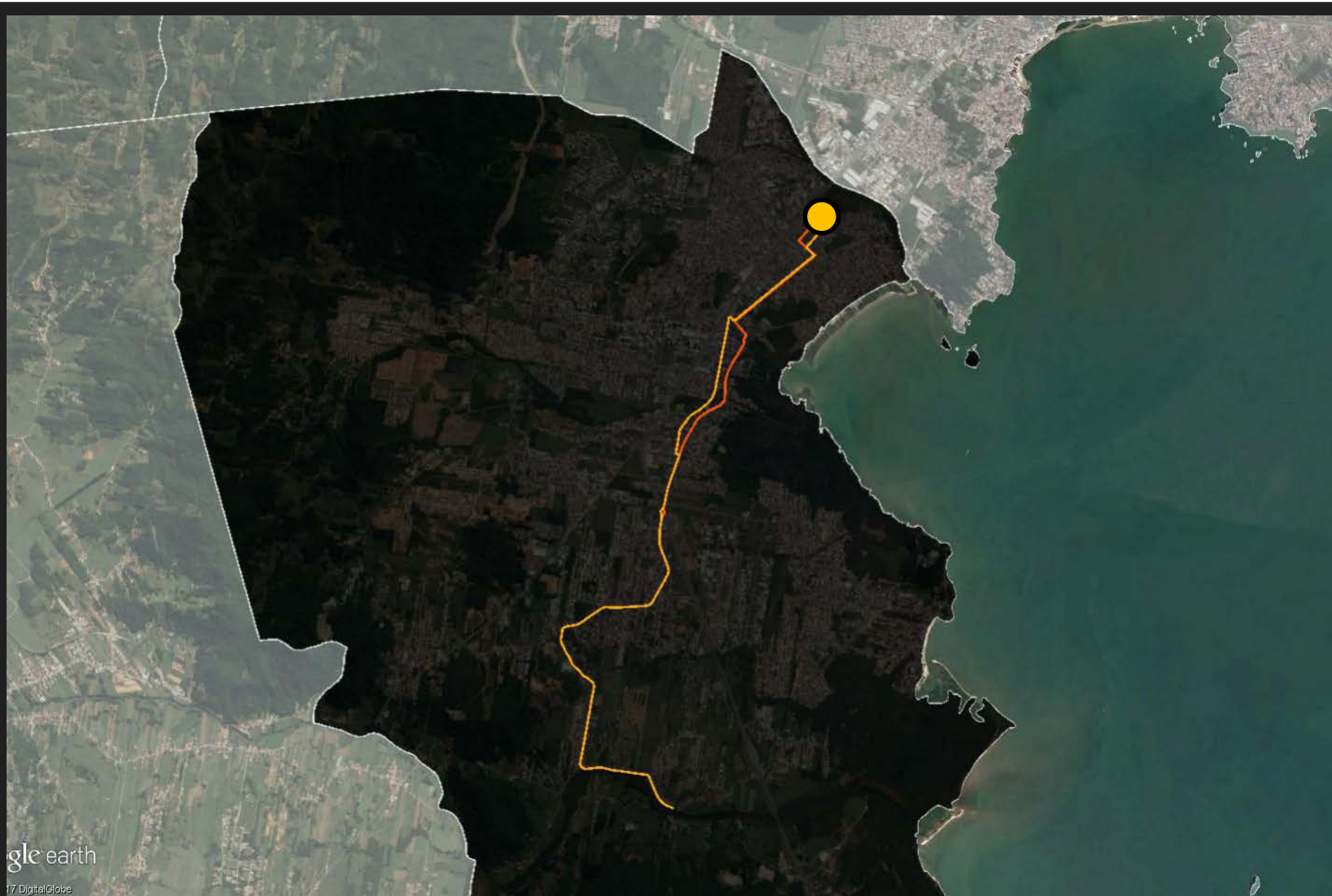
Jardim Eldorado / Centro Circular AH



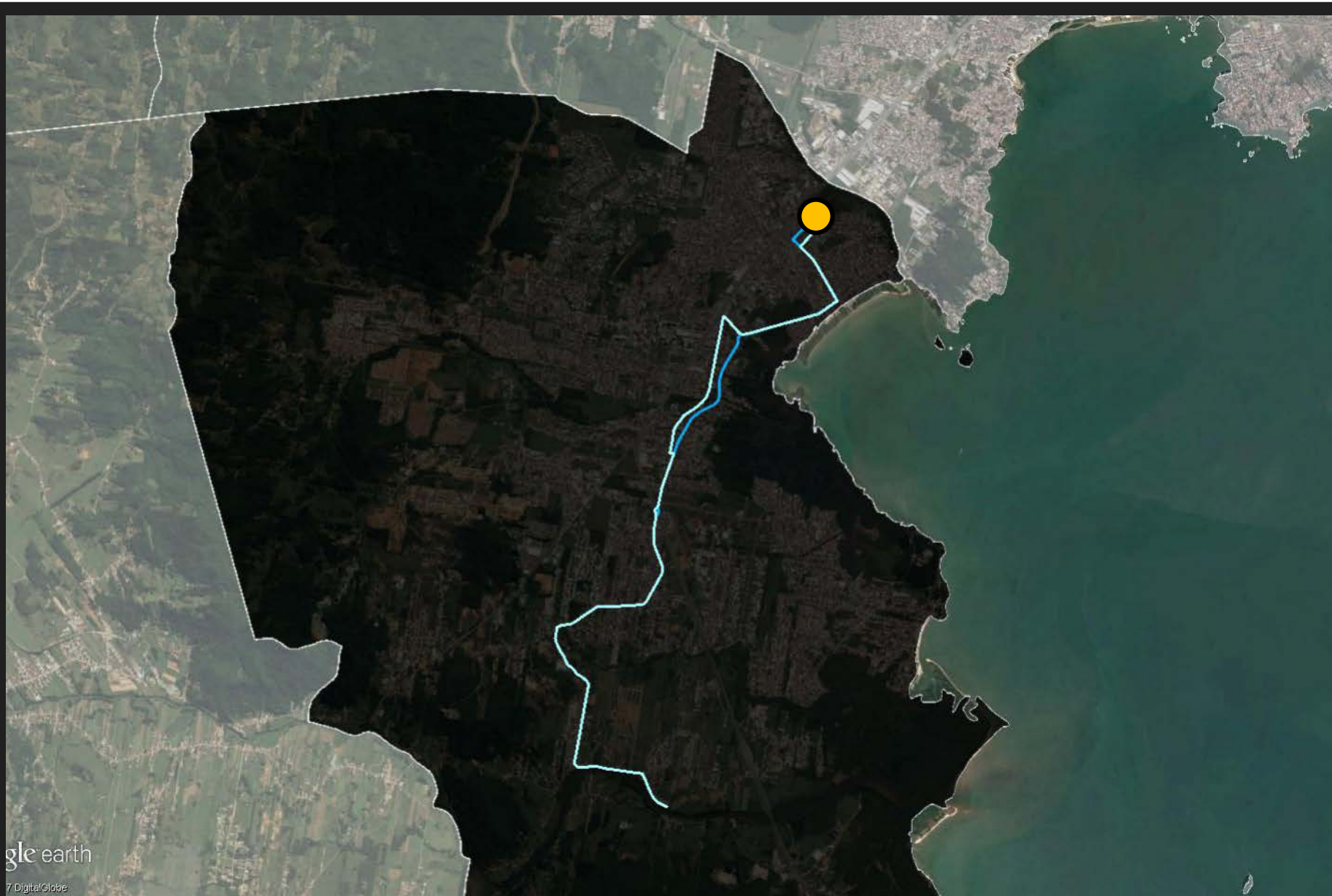
Jardim Eldorado / Centro Circular H



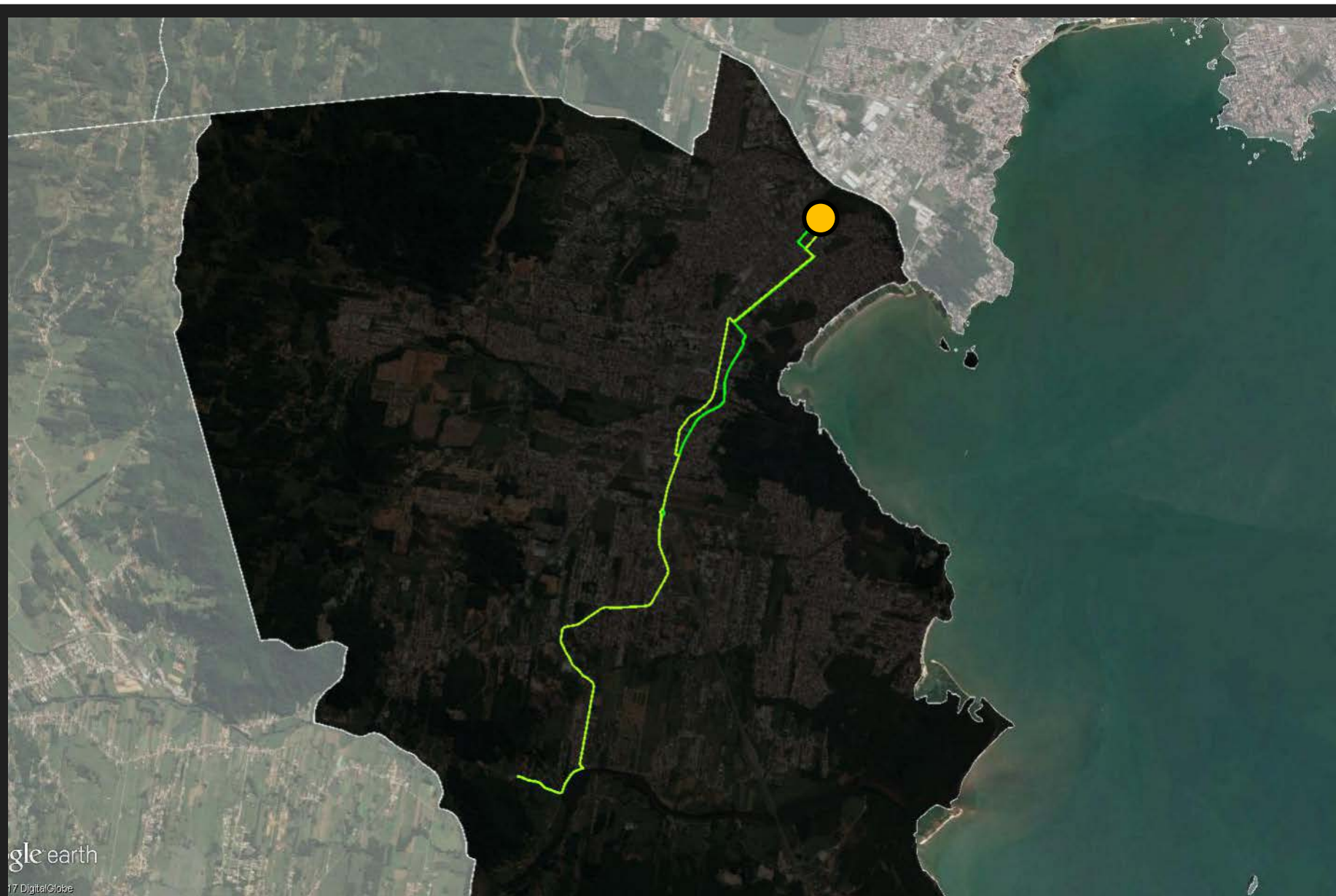
Shopping Continente



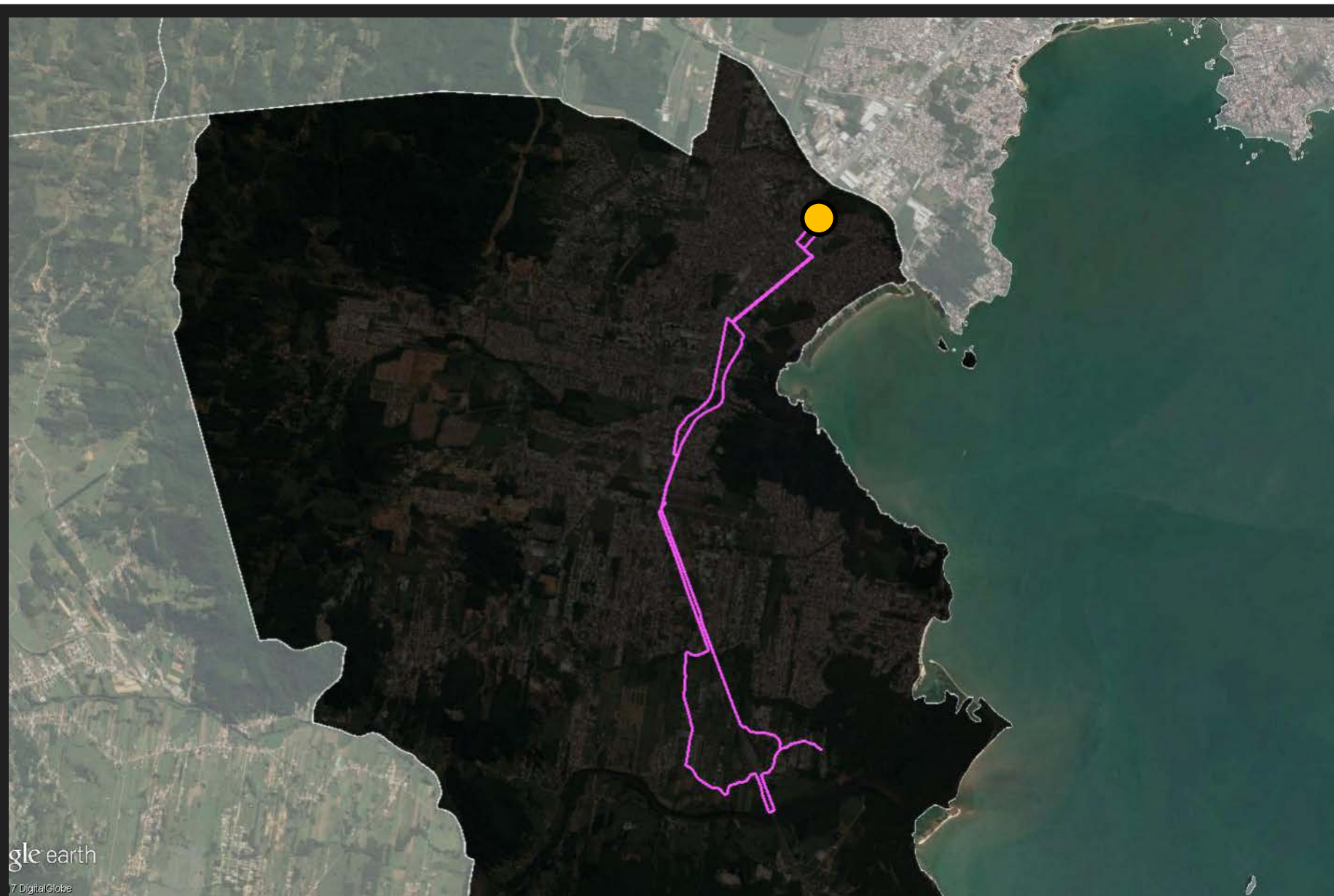
Guarda do Cubatão Via Aririú / Elza Lucchi



Guarda do Cubatão Via Aririú / Aniceto Zacchi

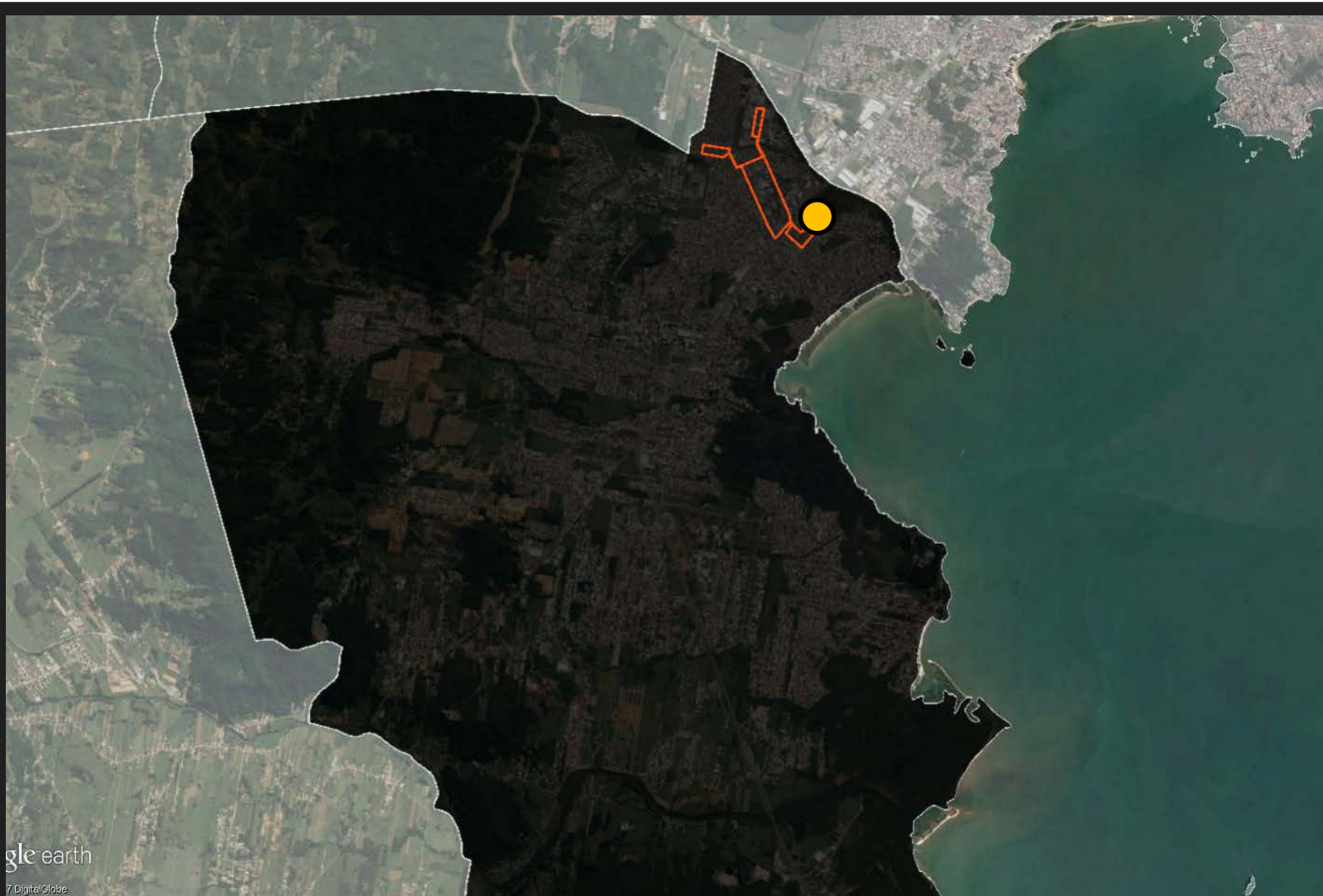


Morro dos Quadros Leste

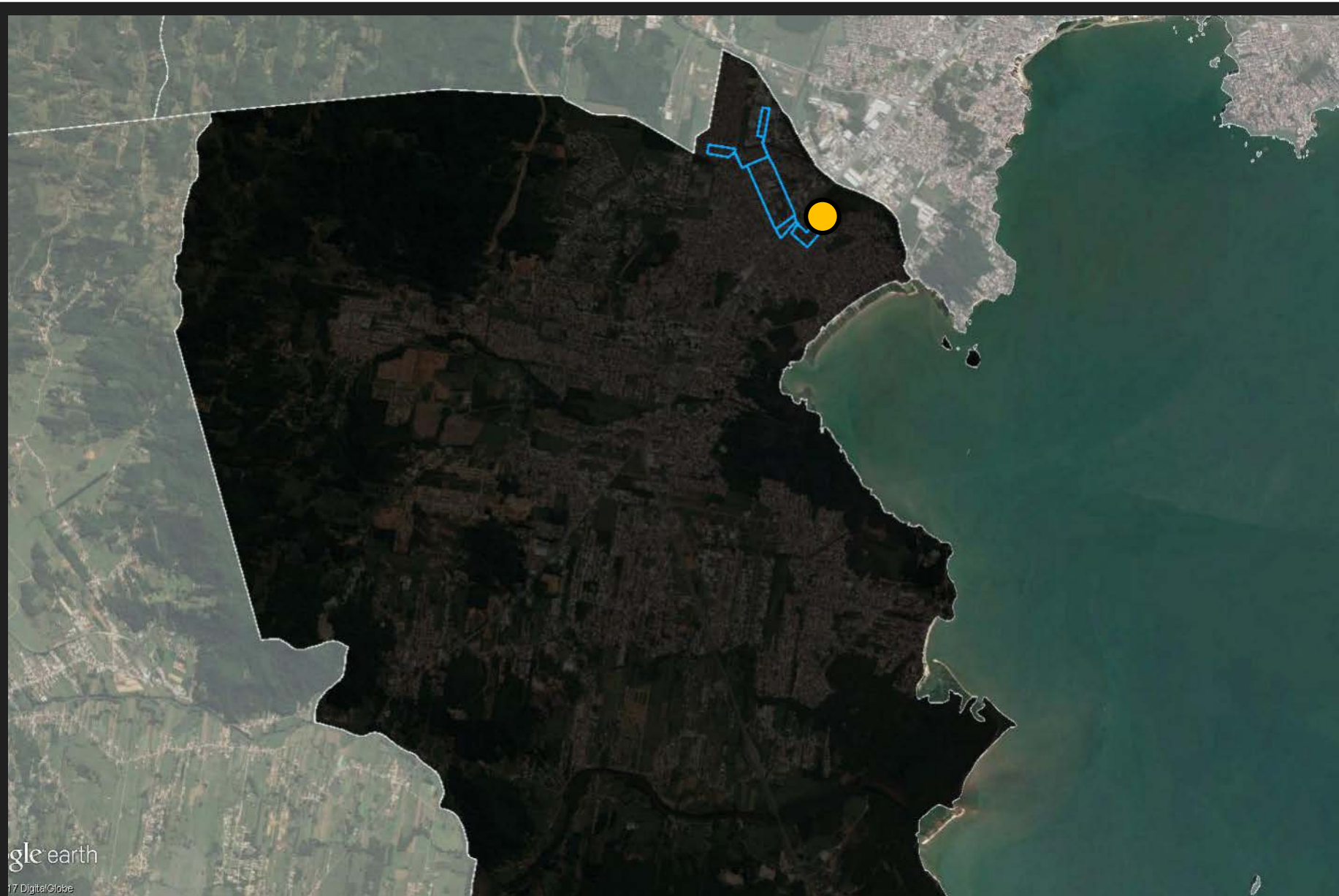


Guarda do Cubatão Via Aririú Formiga

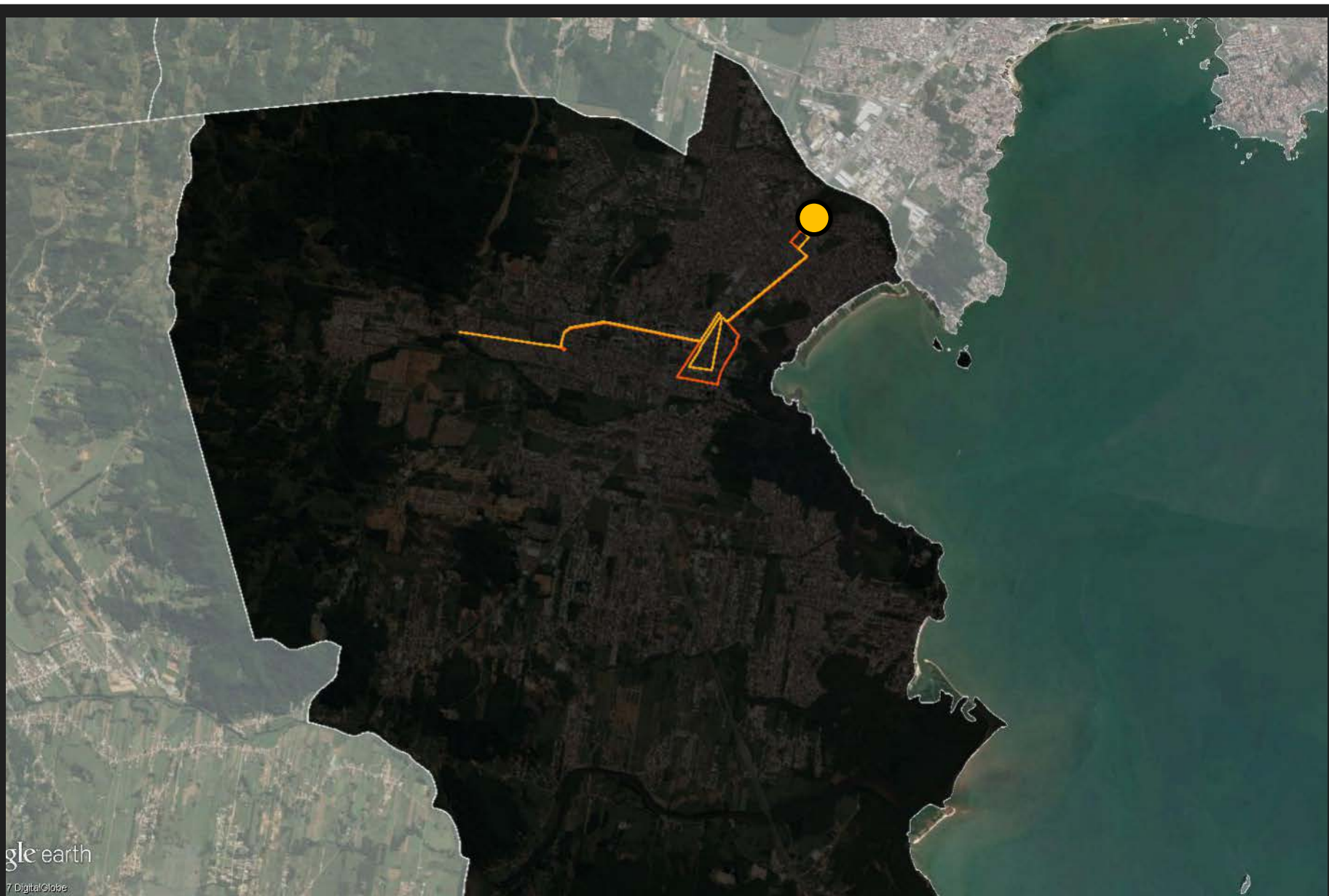




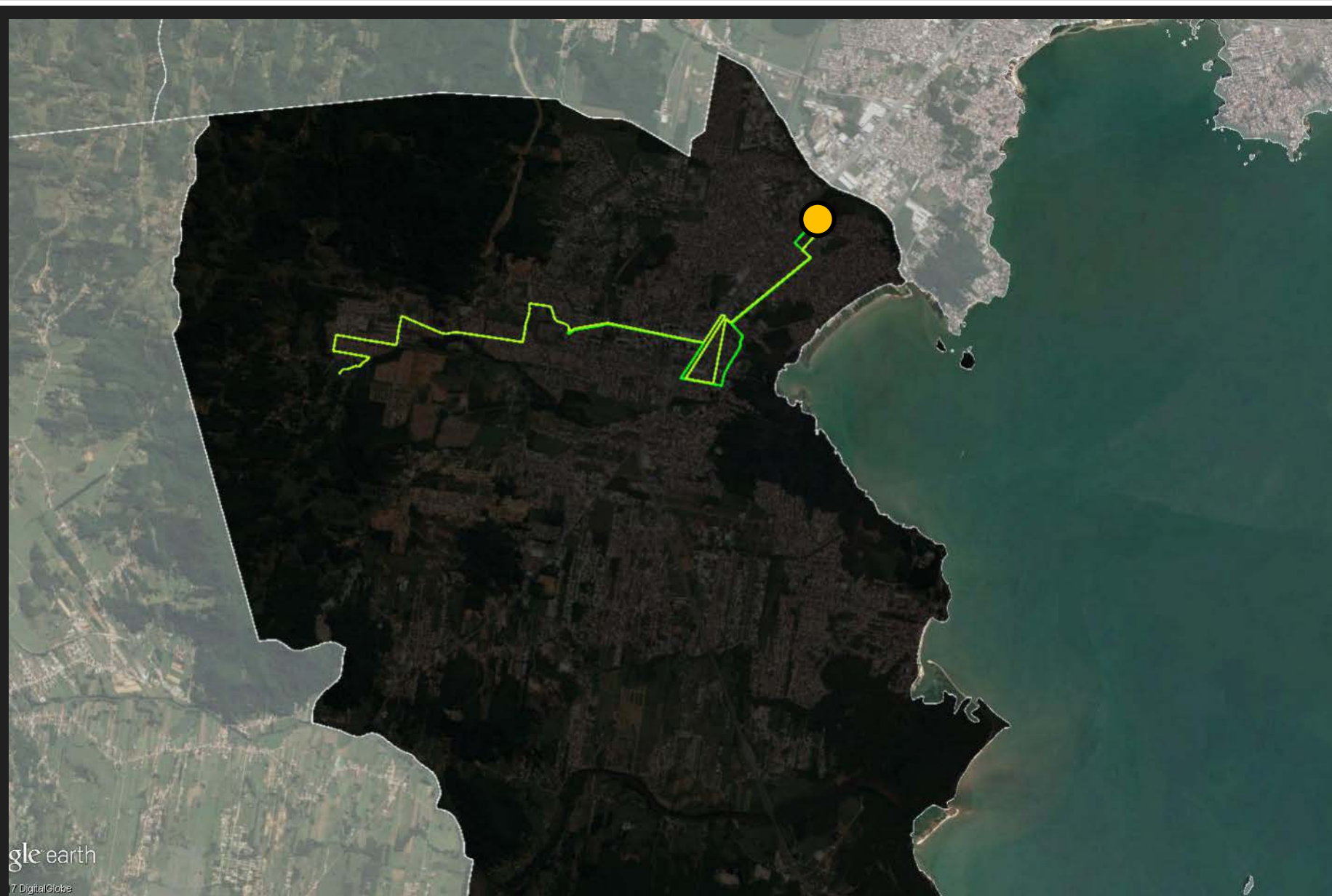
Área Industrial / Frei Damião Circular H



Área Industrial / Frei Damião Circular AH

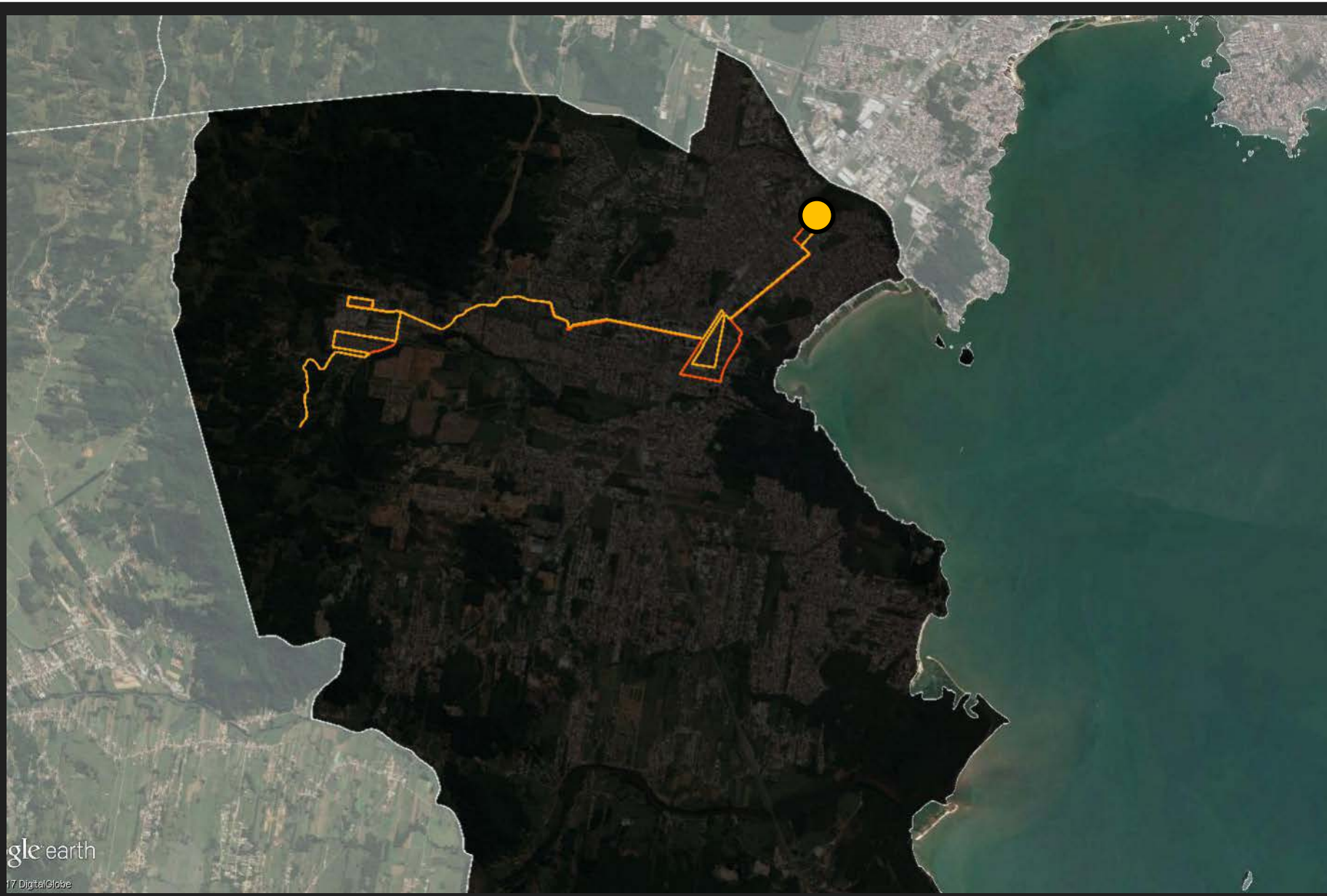


Loteamento Madri

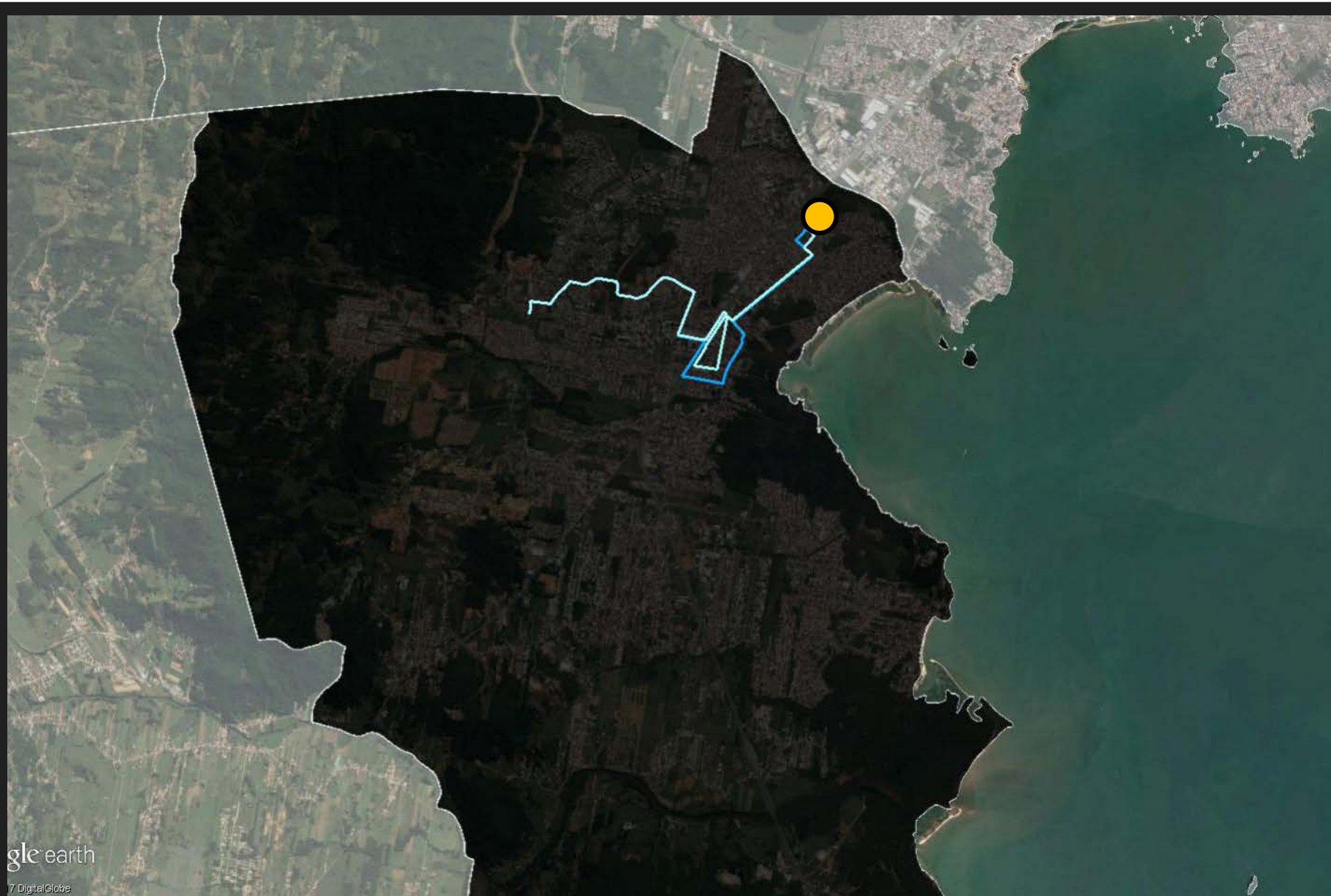


gle earth  
© 2017 DigitalGlobe

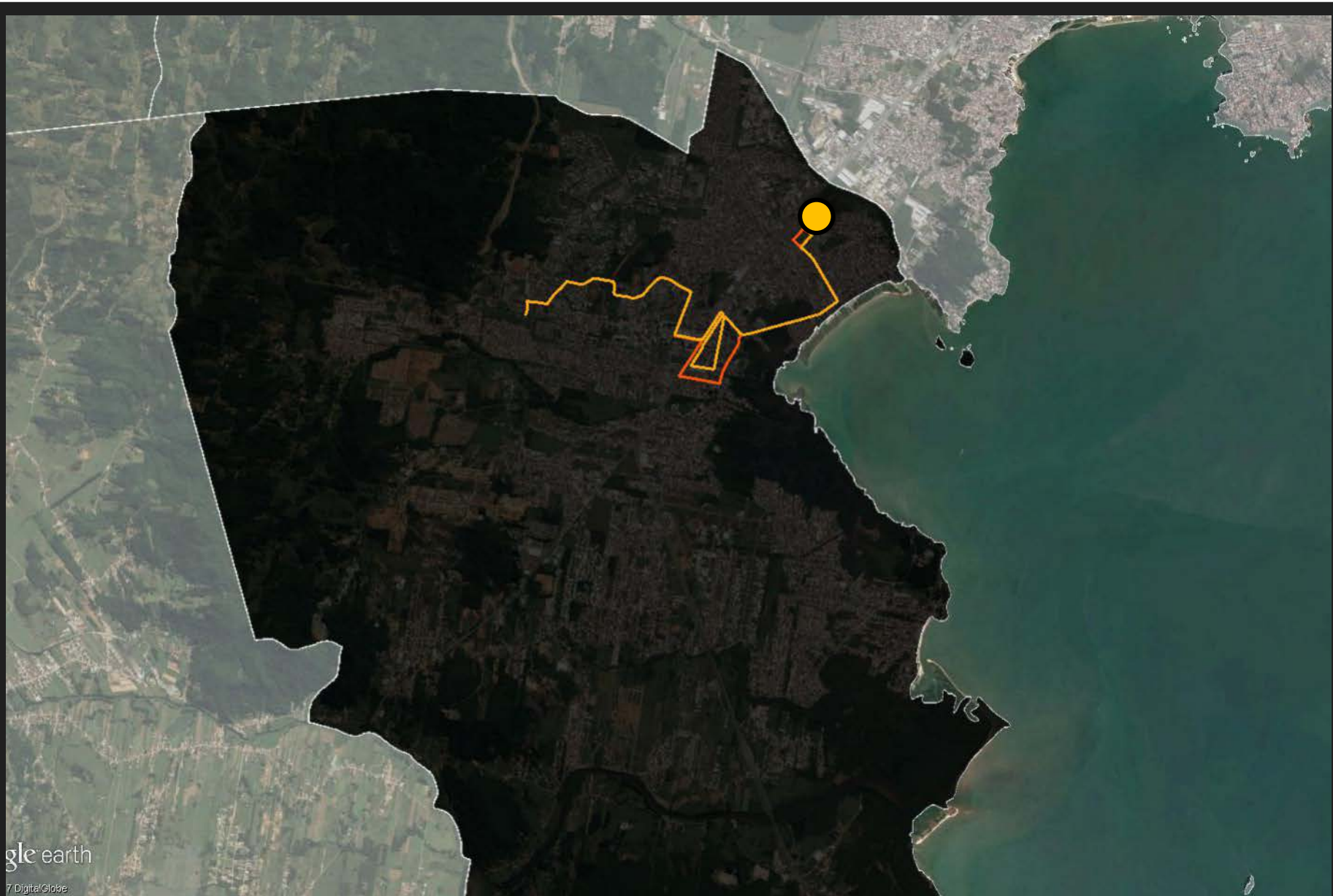
São Sebastião



Morro do Gato



Passa Vinte Via Elza Lucchi



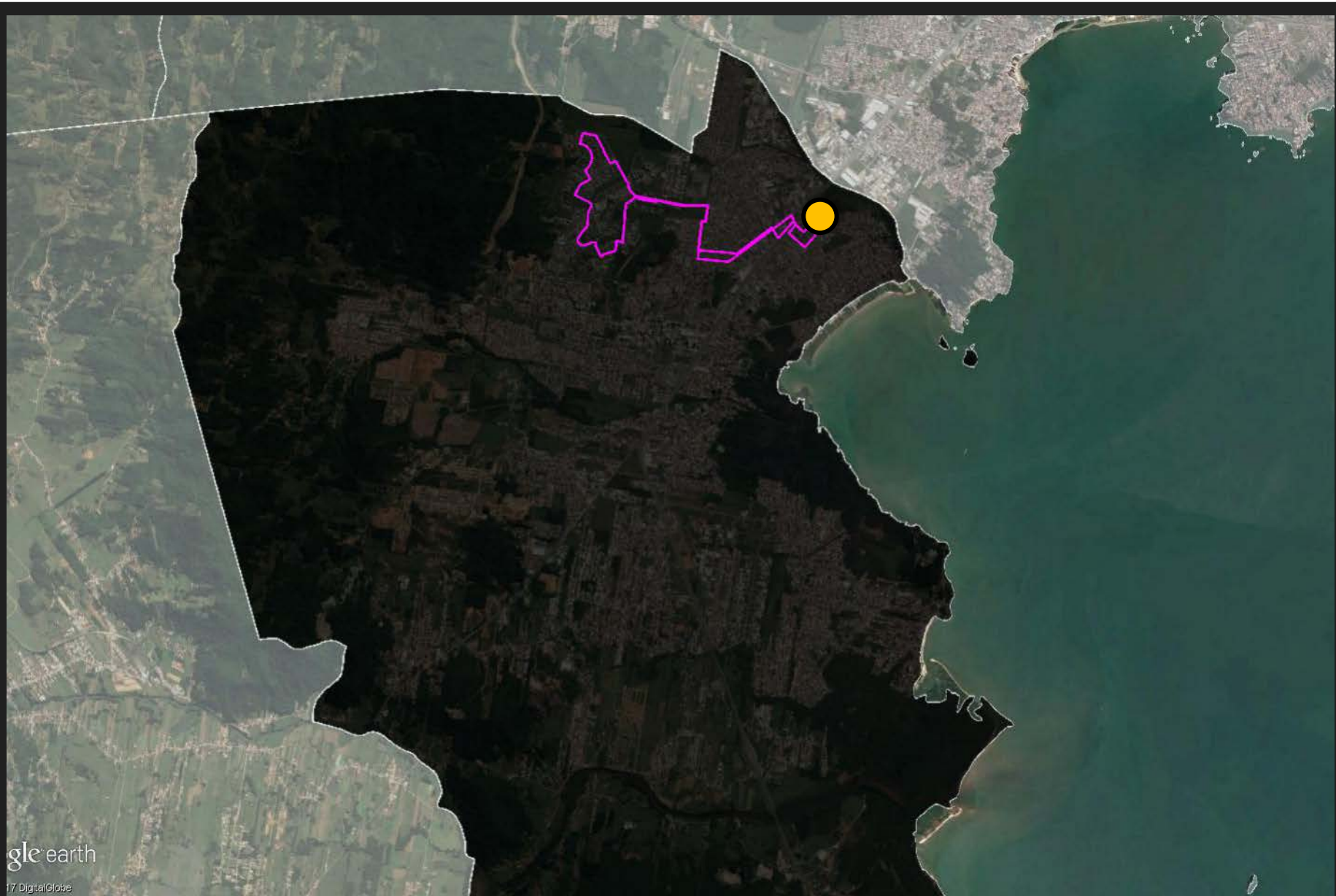
Passa Vinte Via Aniceto Zacchi



gle earth  
17 DigitalGlobe

Unisul

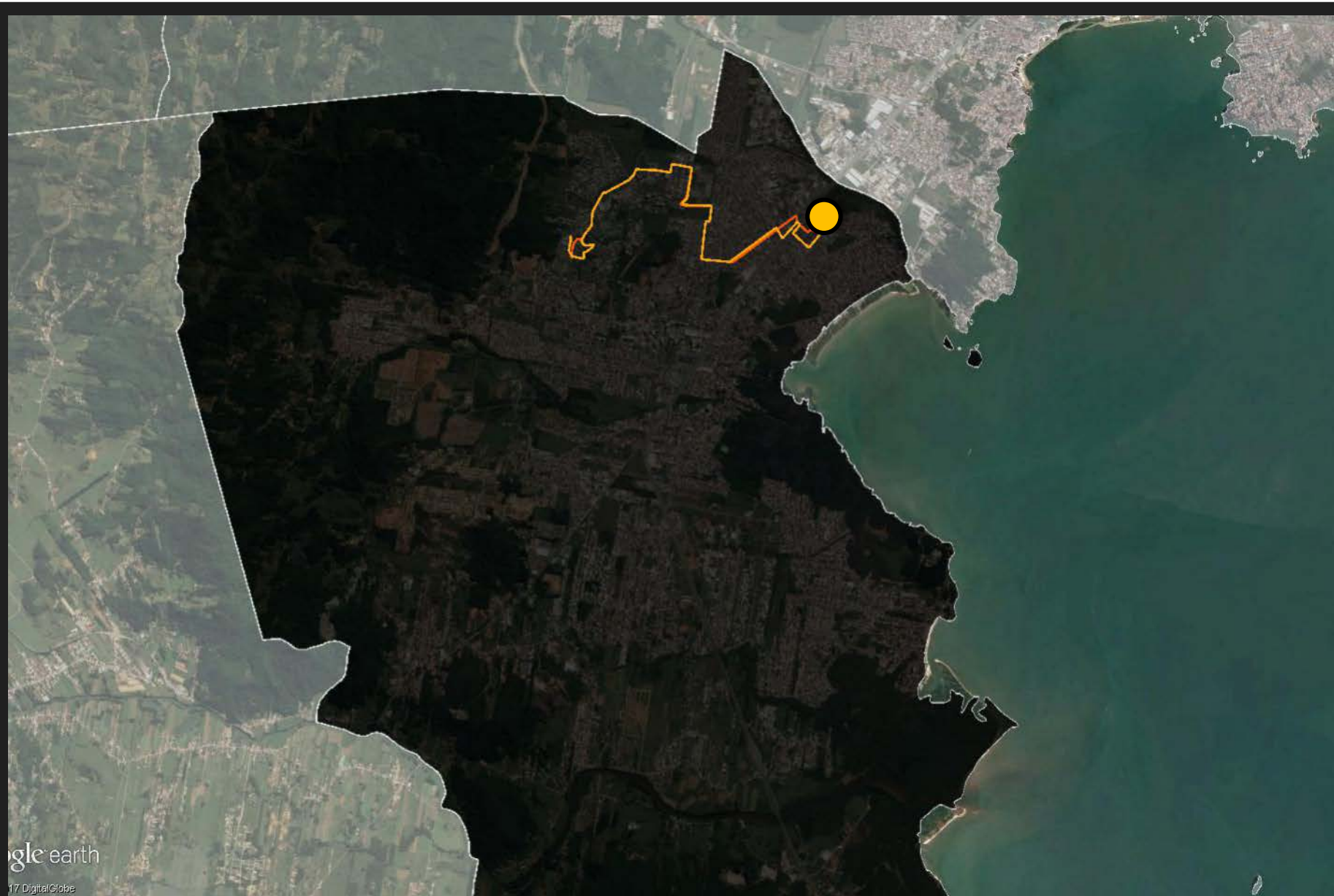




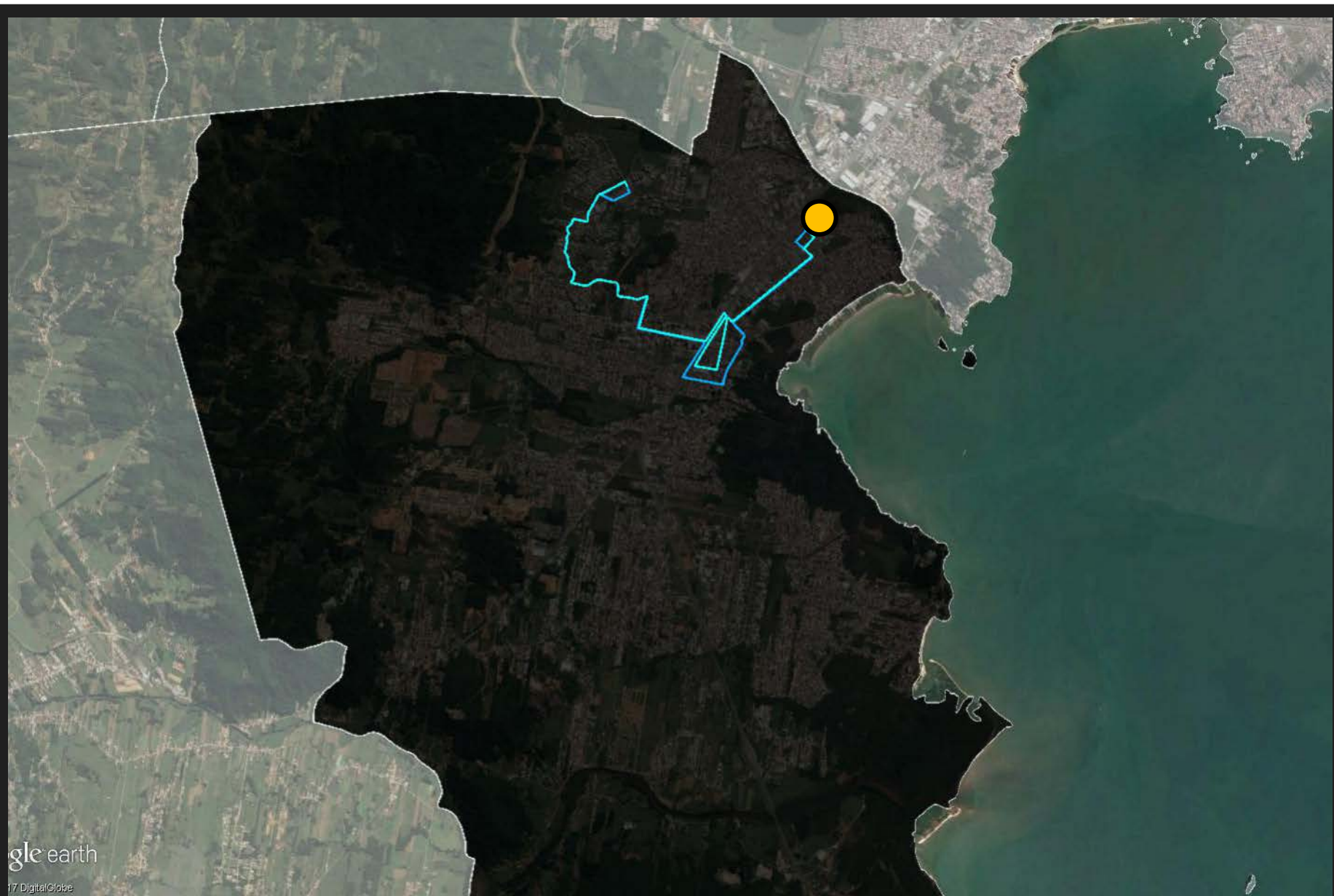
Pedra Branca



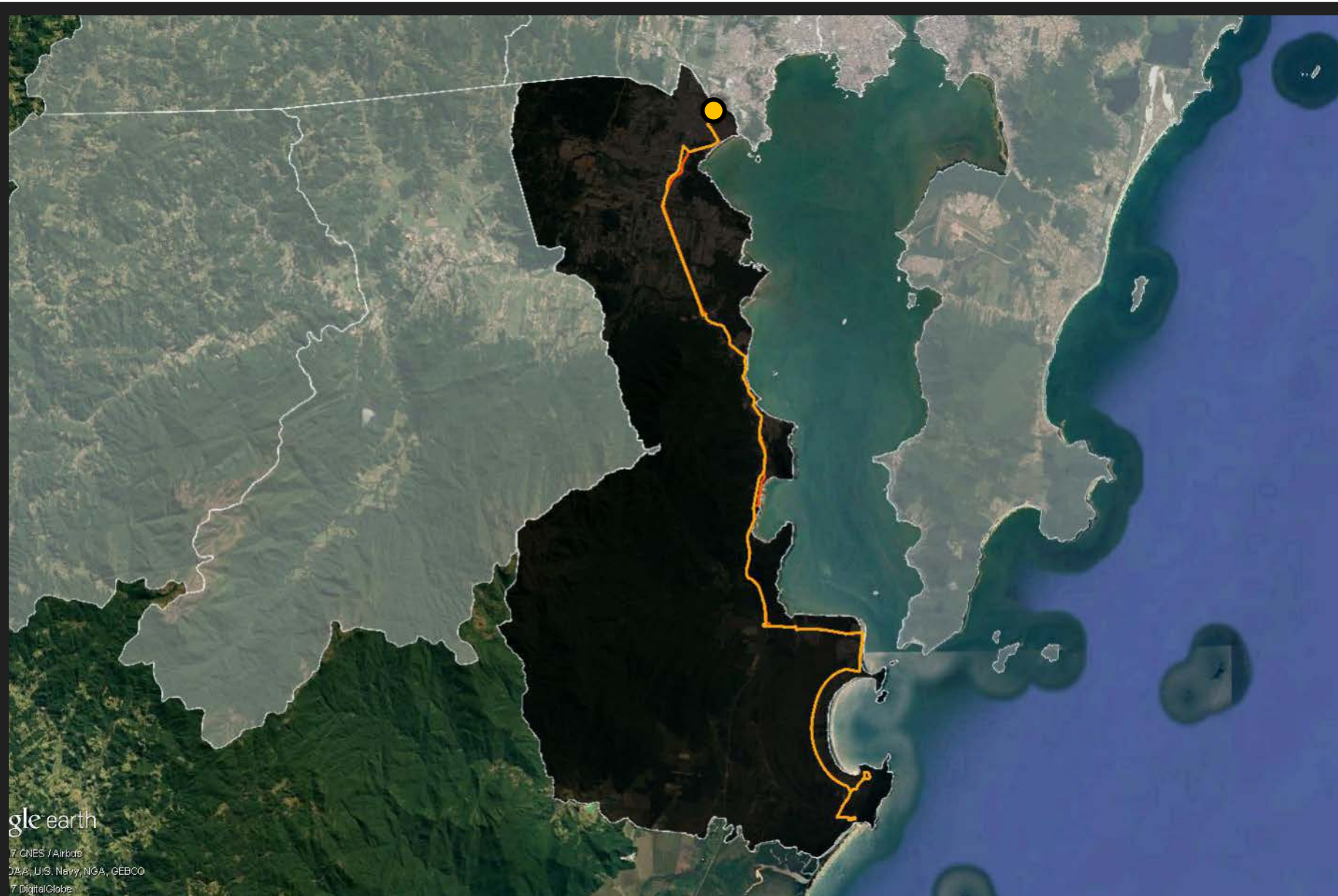
gle earth  
© 2017 DigitalGlobe



IFSC Via Tecno Park



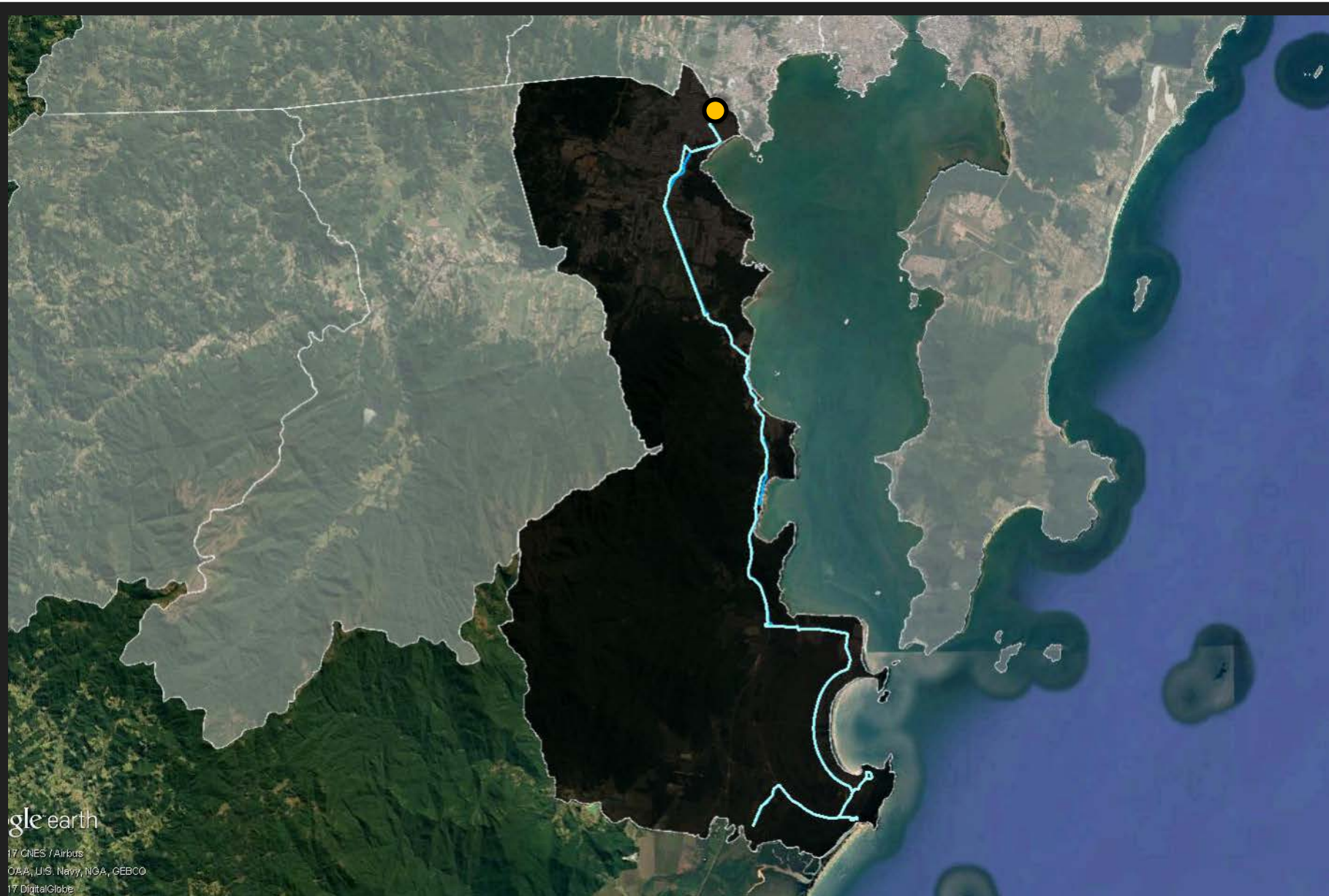
IFSC Via Pagani



Pinheira 1



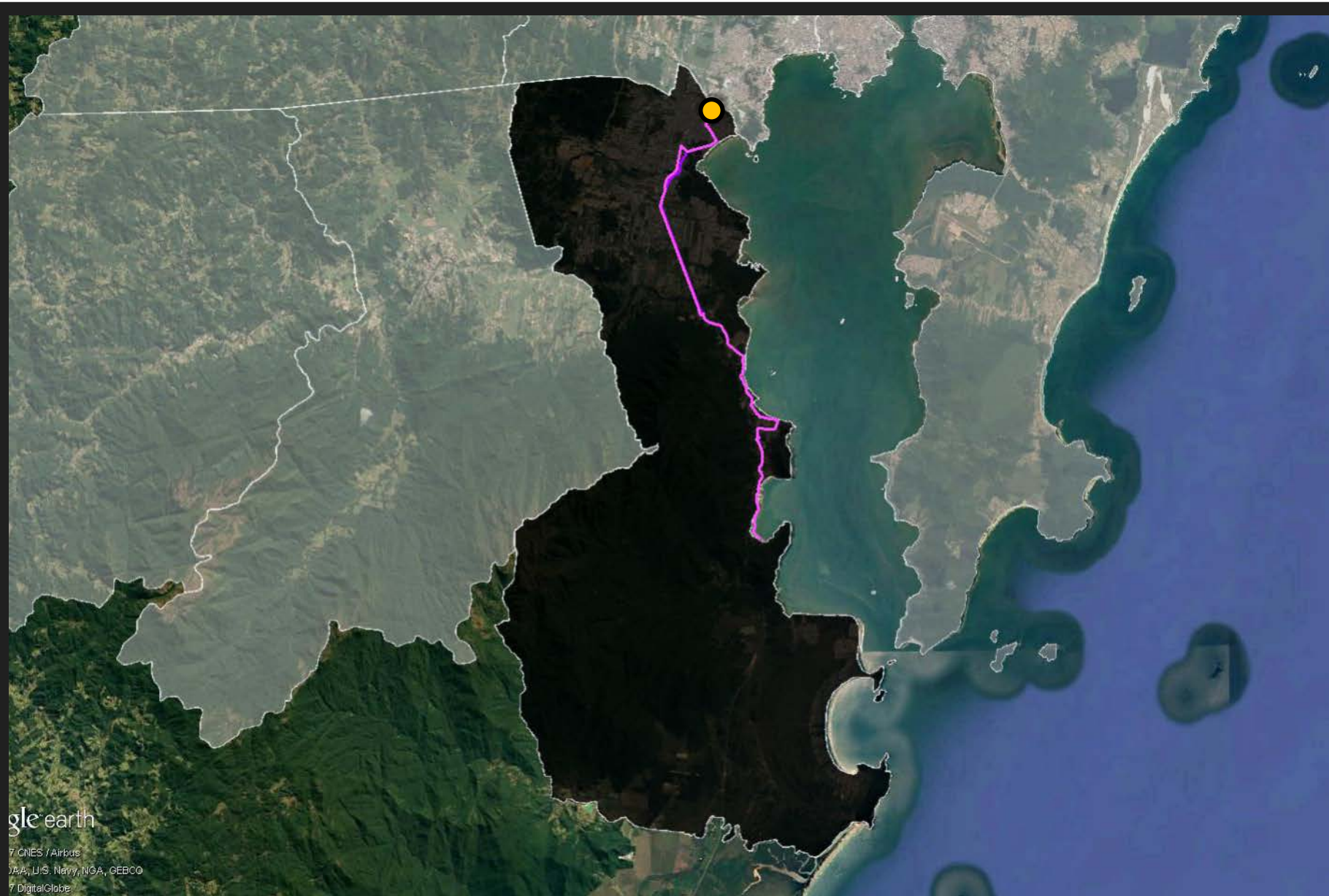
Pinheira 2



gle earth

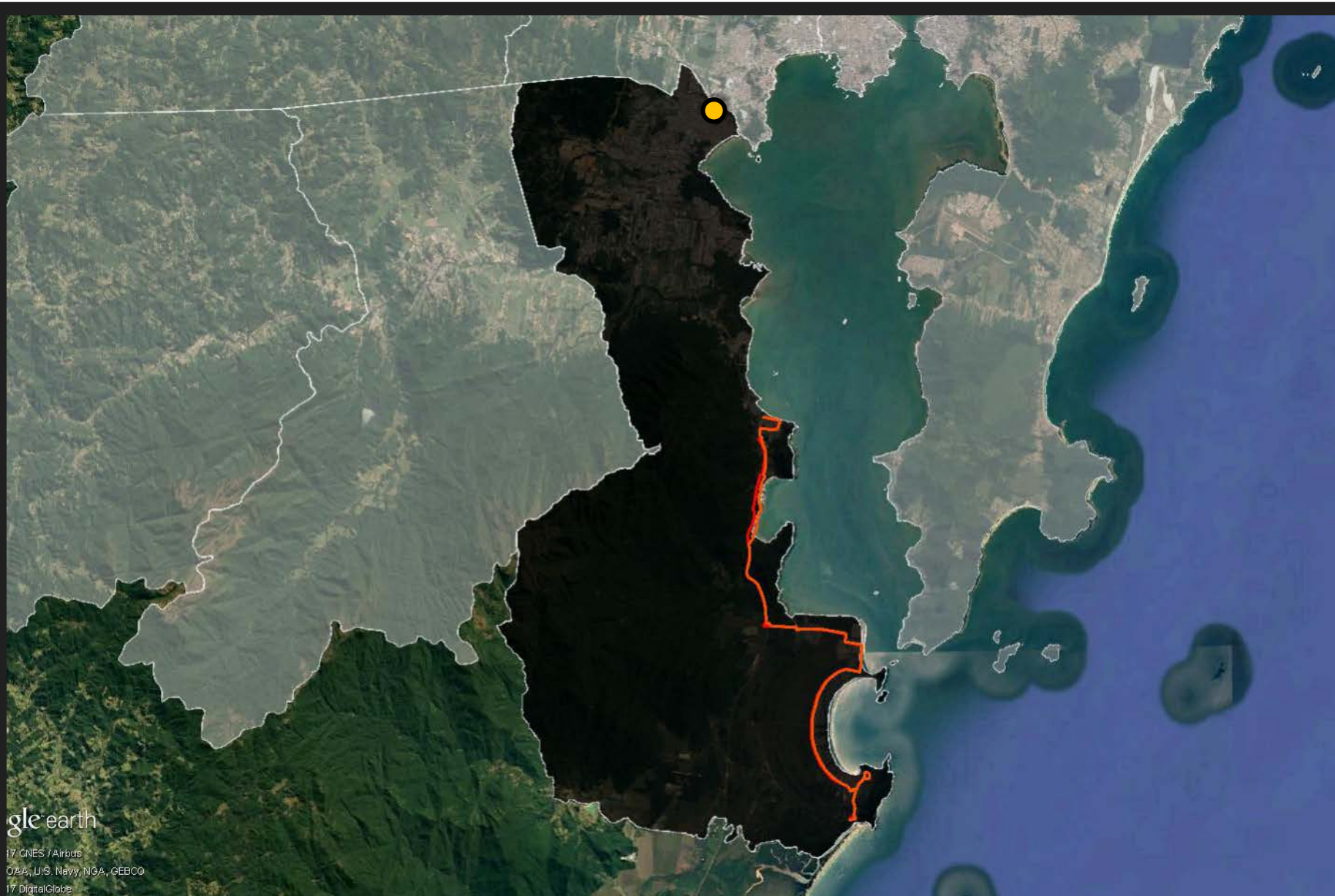
© 17 CNES / Airbus  
© 17 OAA, U.S. Navy, NOAA, GEBCO  
© 17 DigitalGlobe

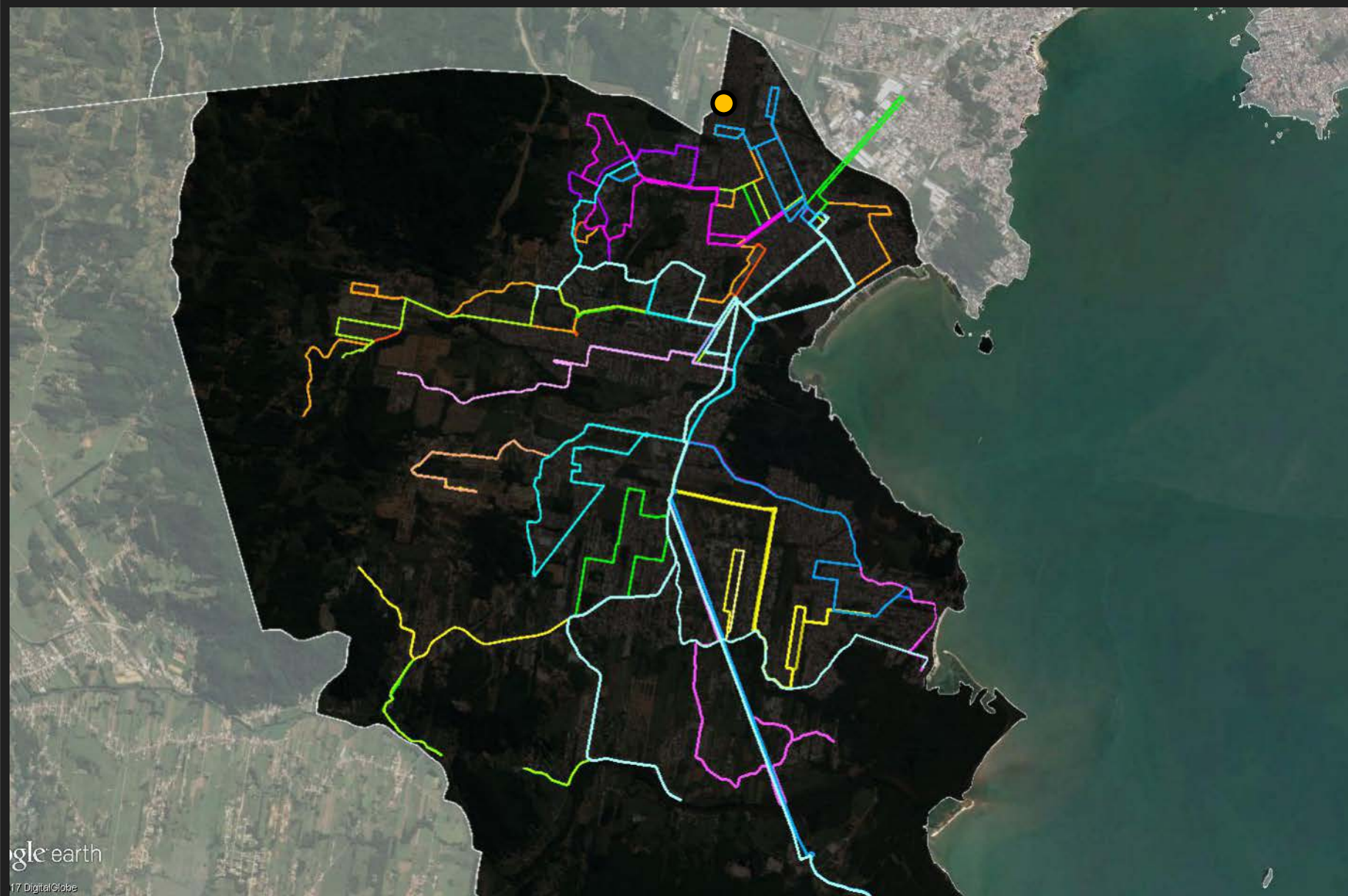
Pinheira 3



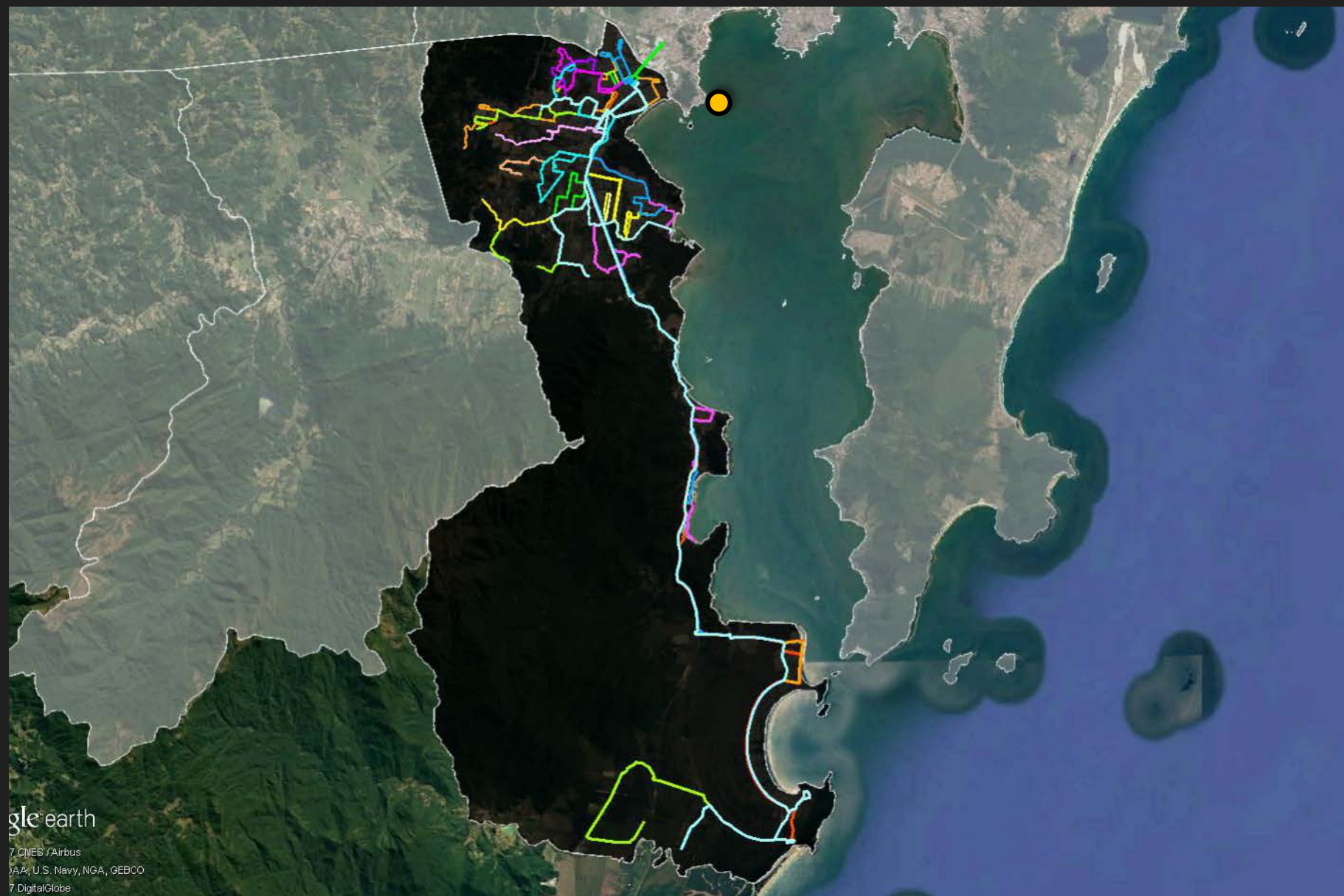
Enseada do Brito



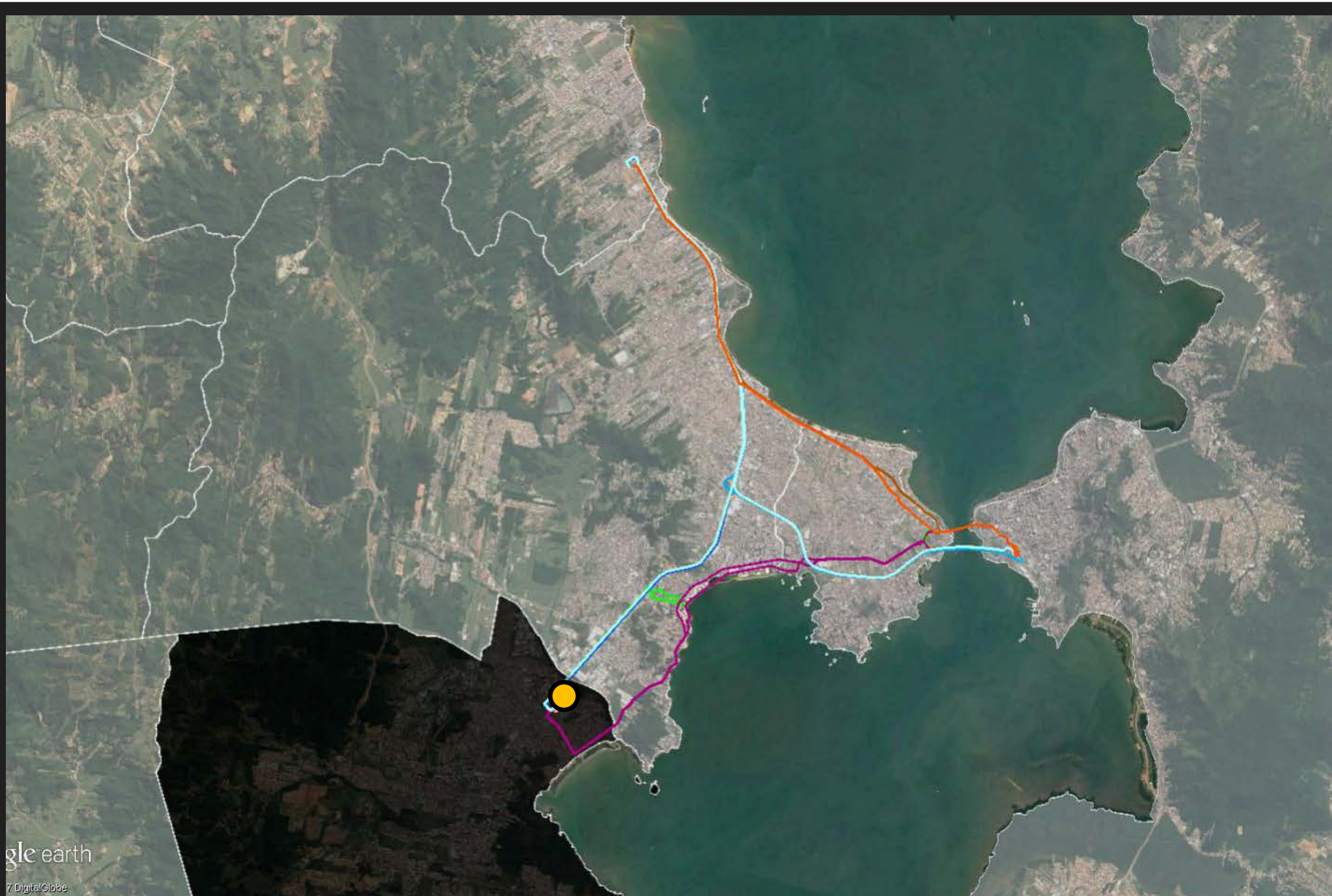




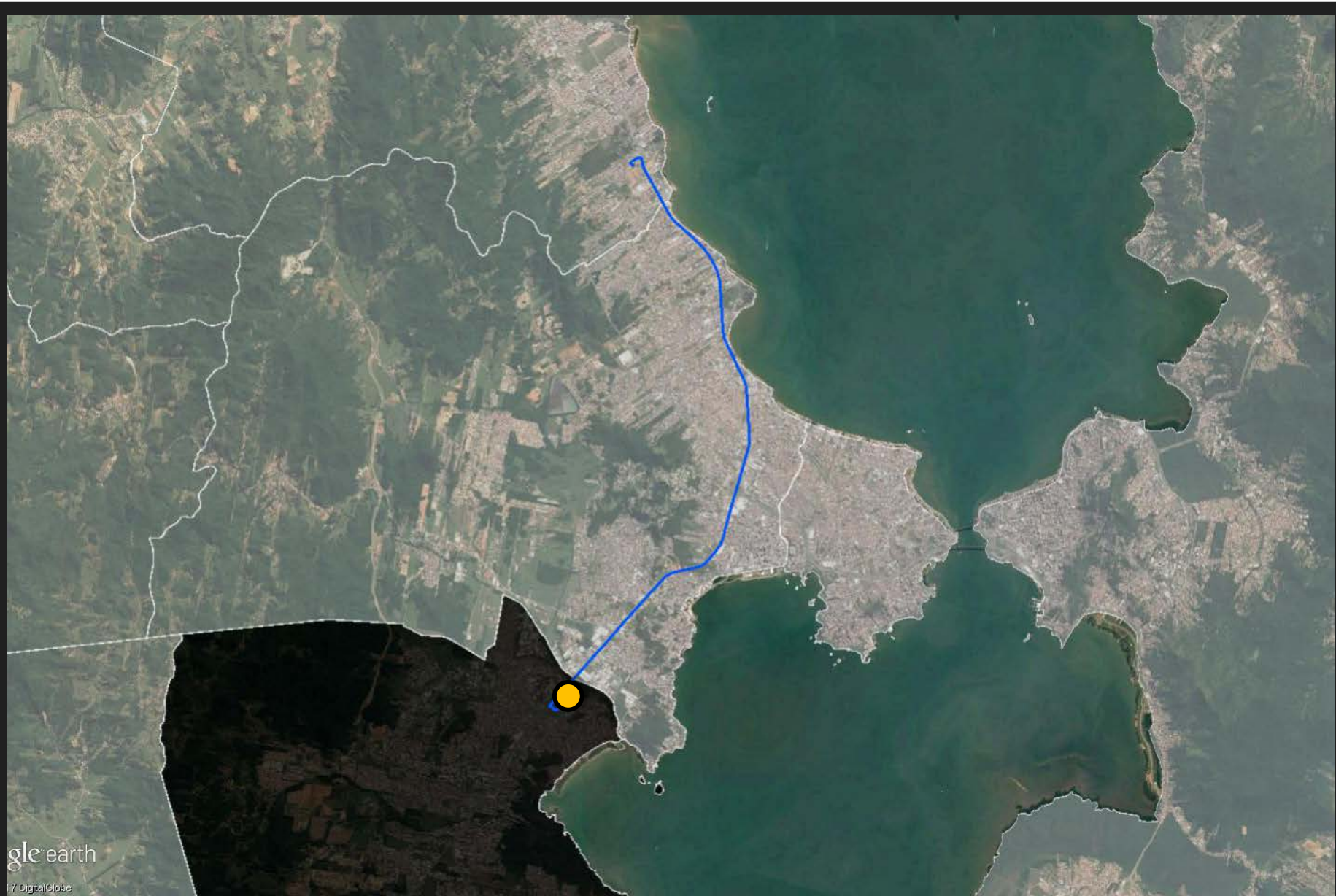
Norte de Palhoça – Todas as Linhas



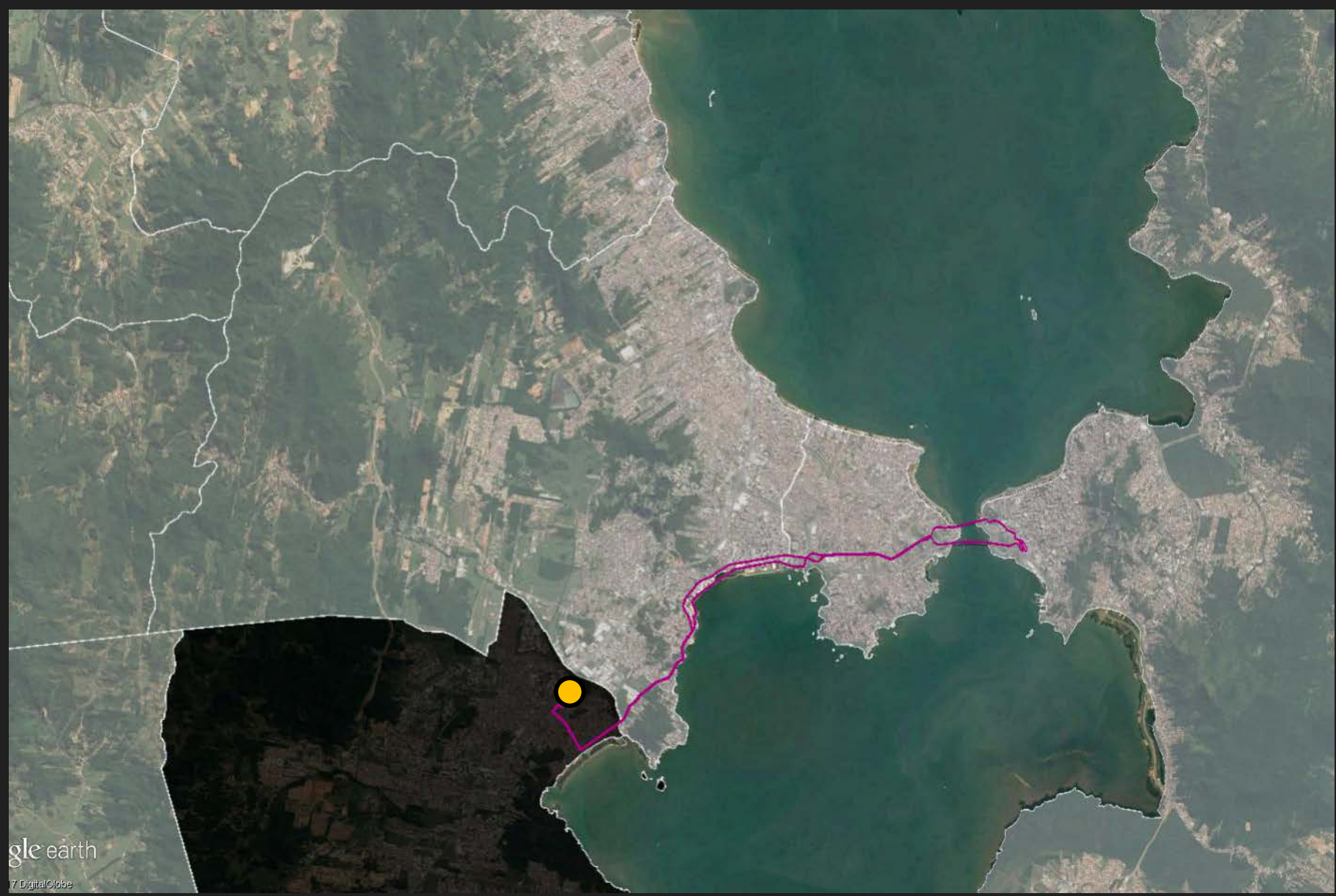
Palhoça – Todas as Linhas



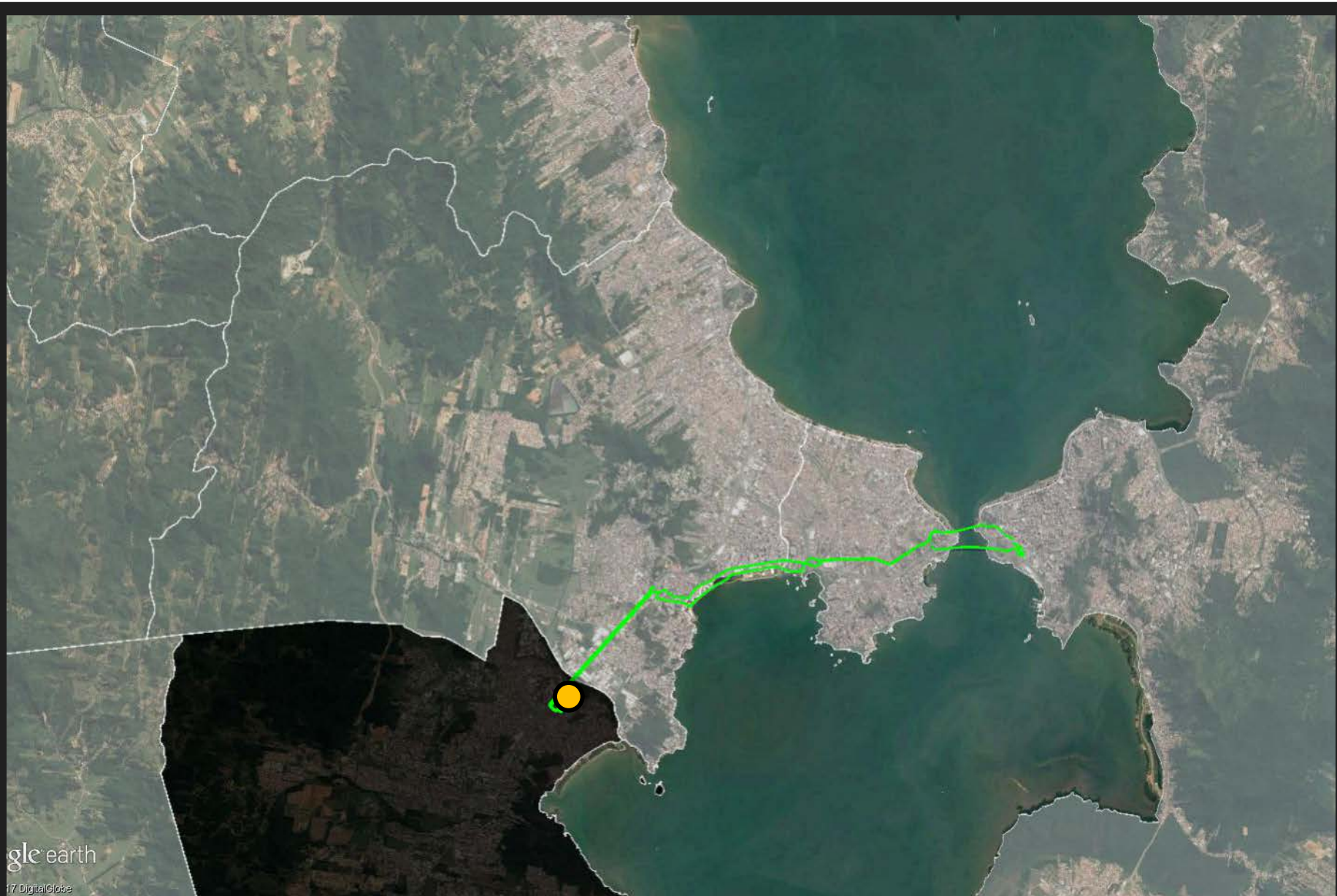
Linhas Troncais

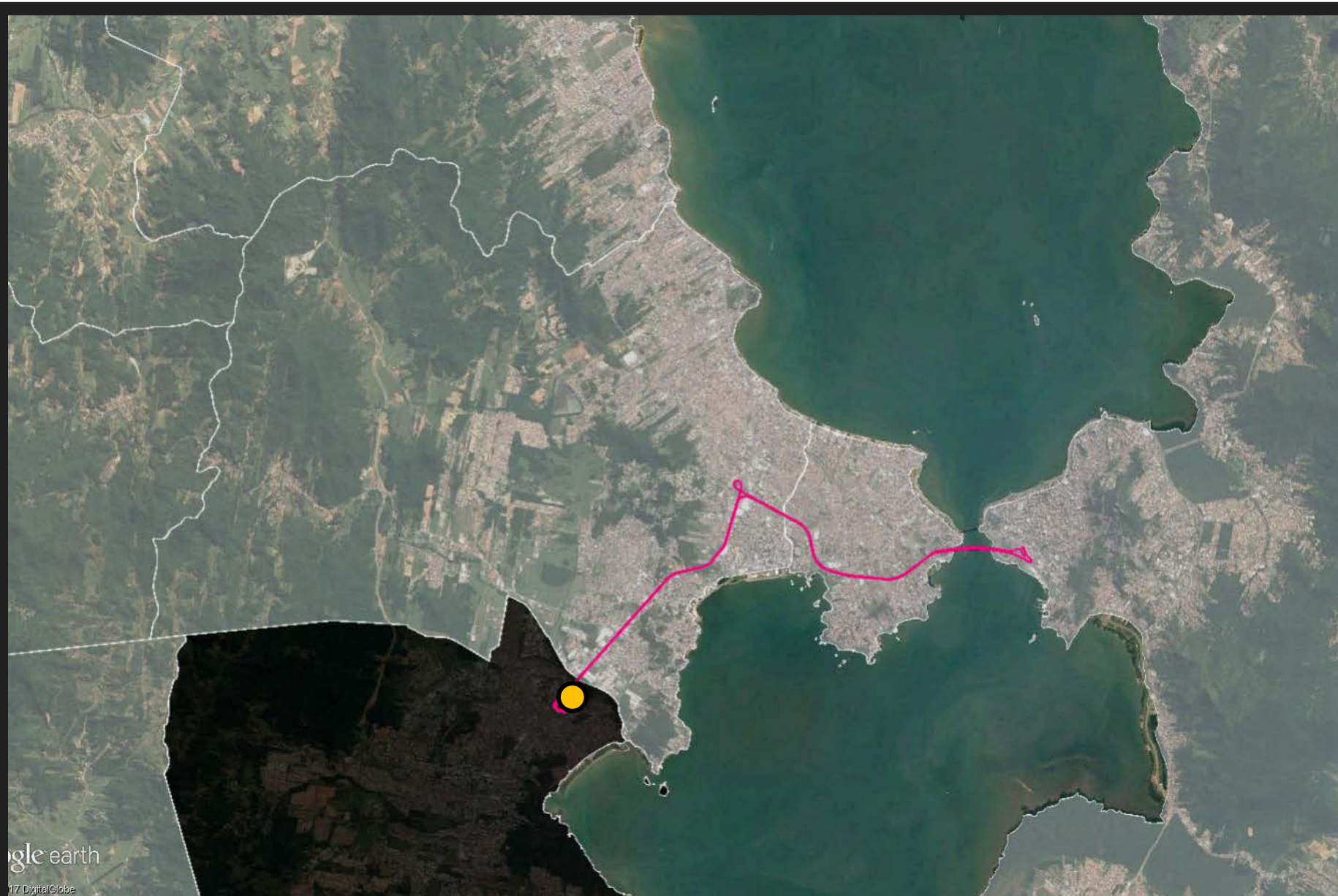


Palhoça - Biguaçu



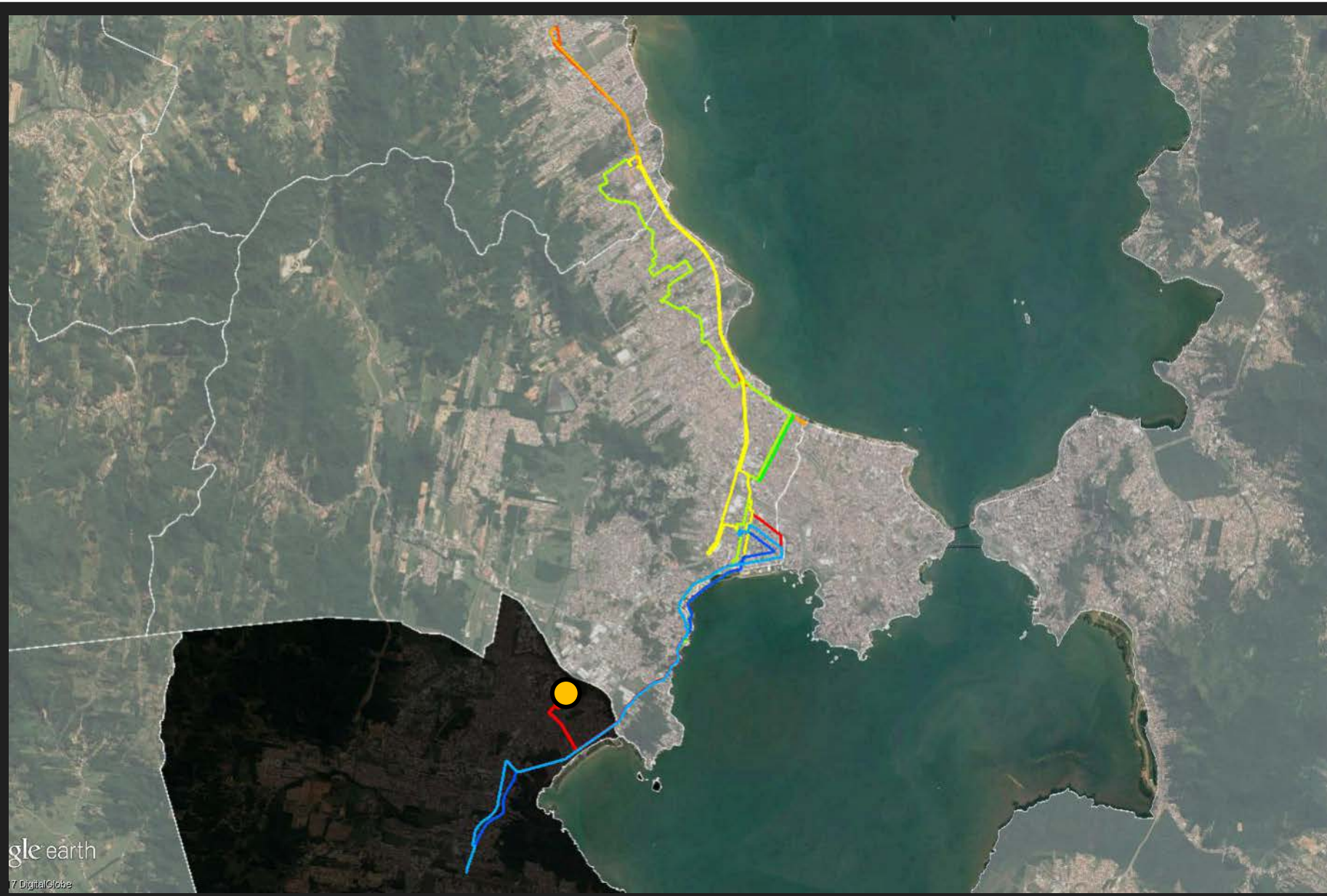
Palhoça – TICEN Via Centro Histórico





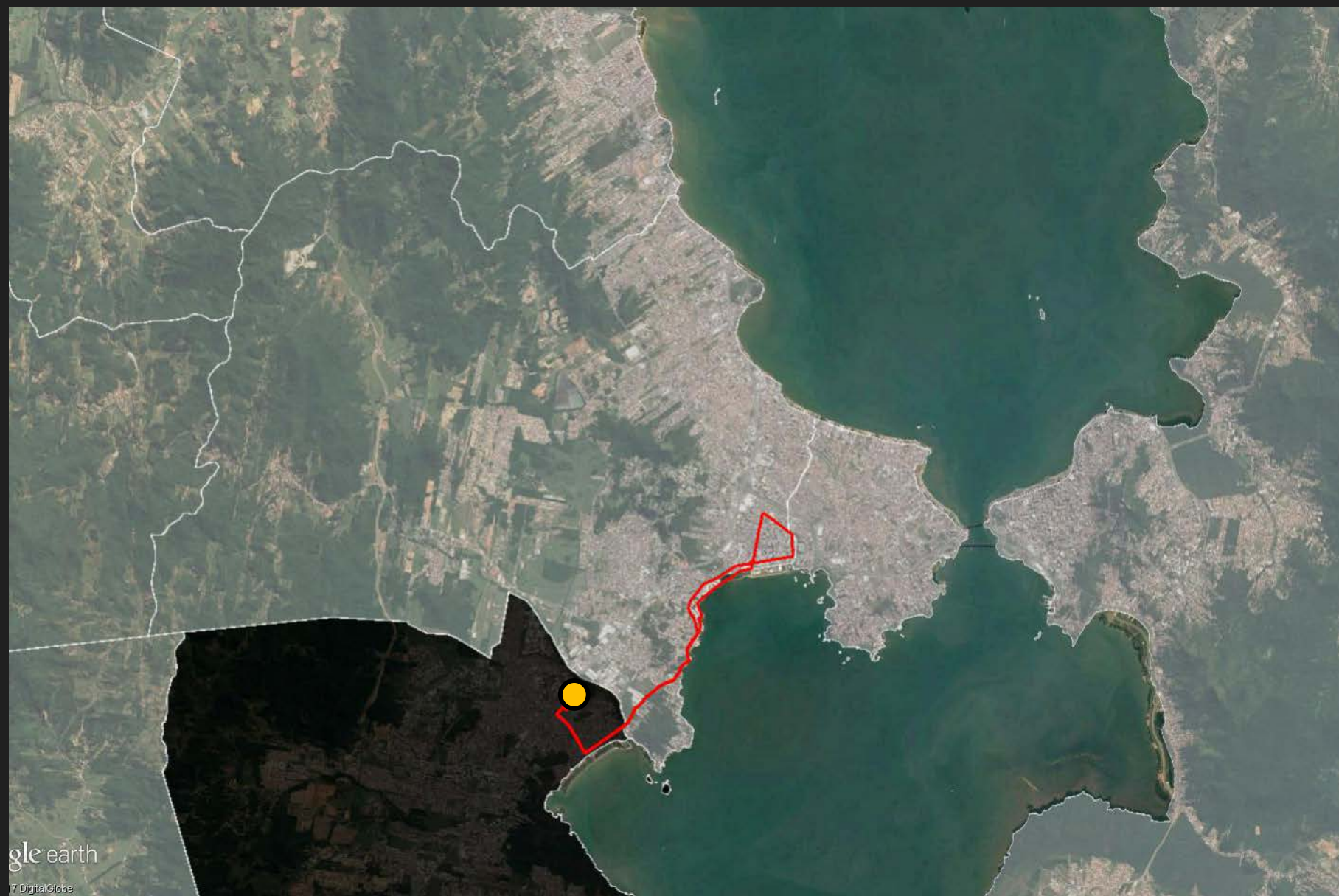
Palhoça – TICEN Via BR-282

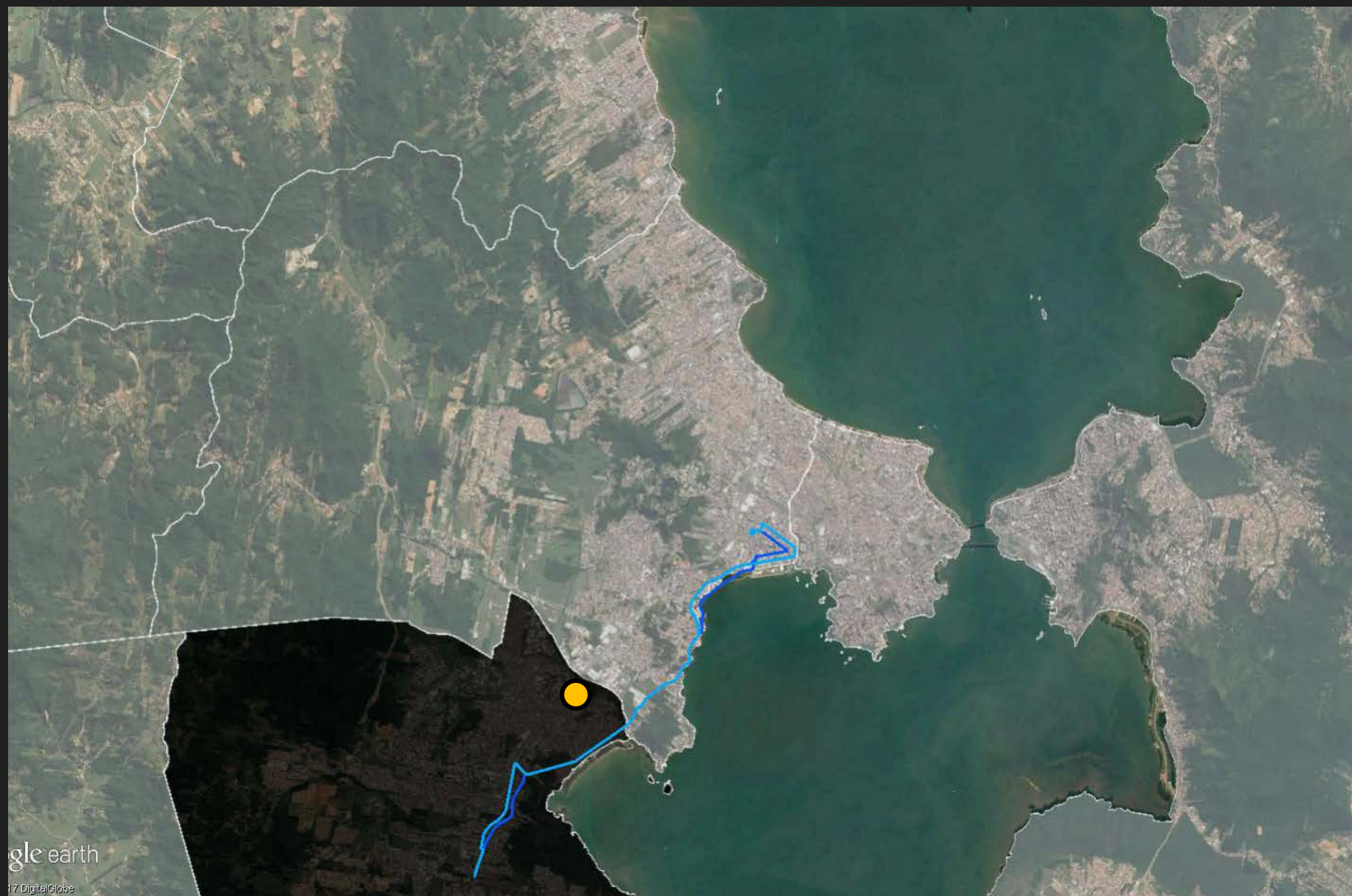




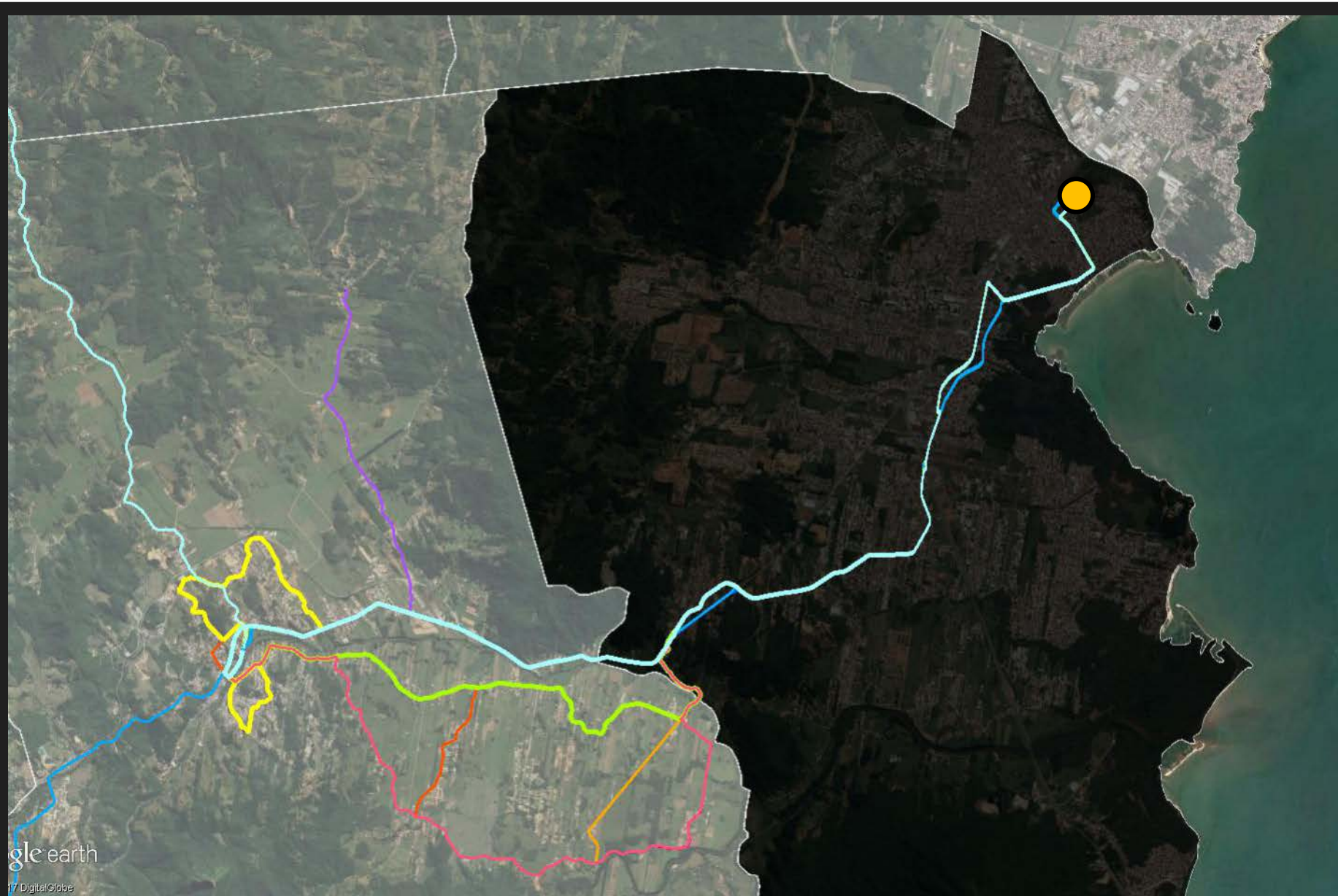
Linhas Intercidades

gle earth  
© 2017 DigitalGlobe

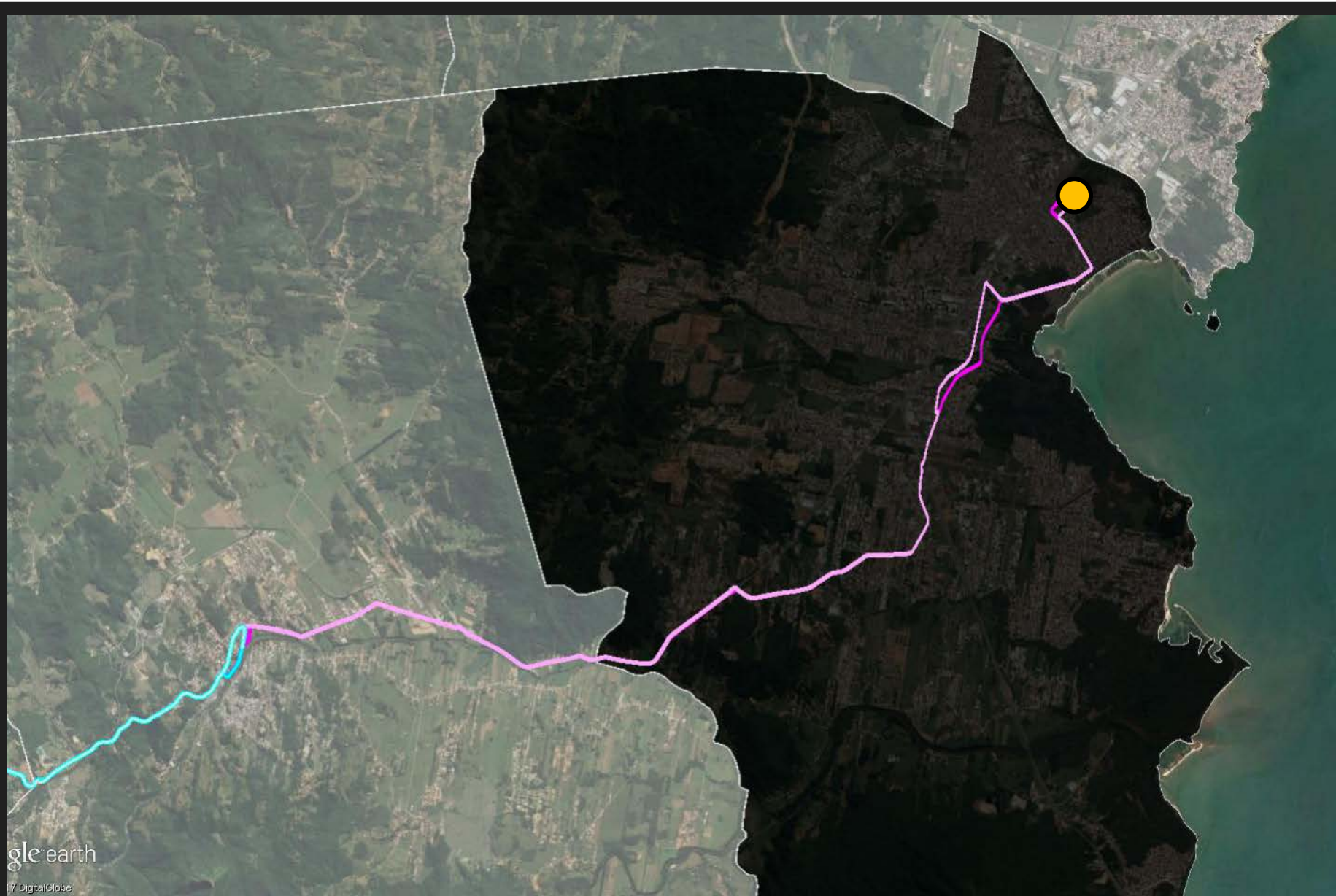




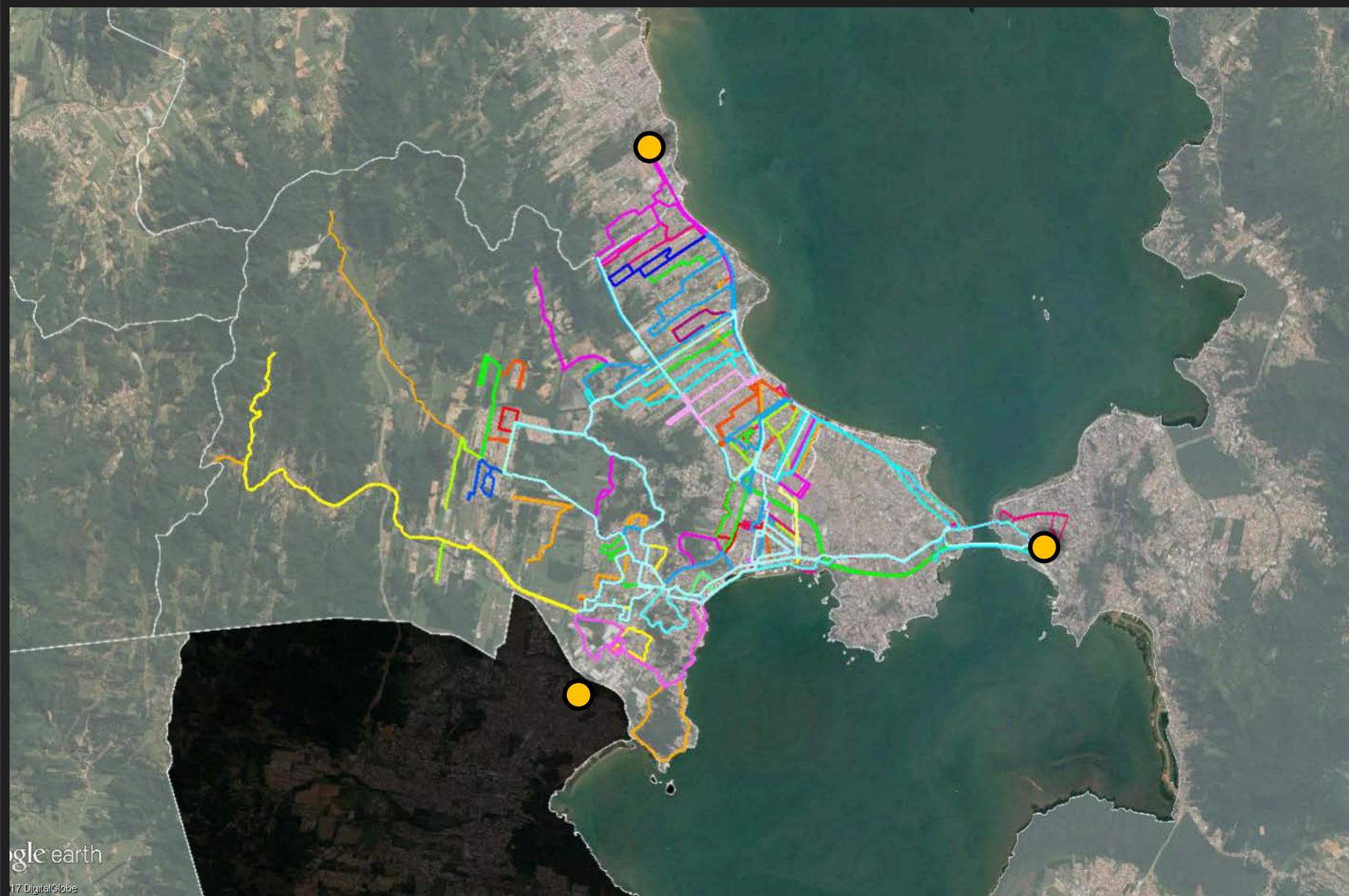
Centro de Palhoça – Kobrasol



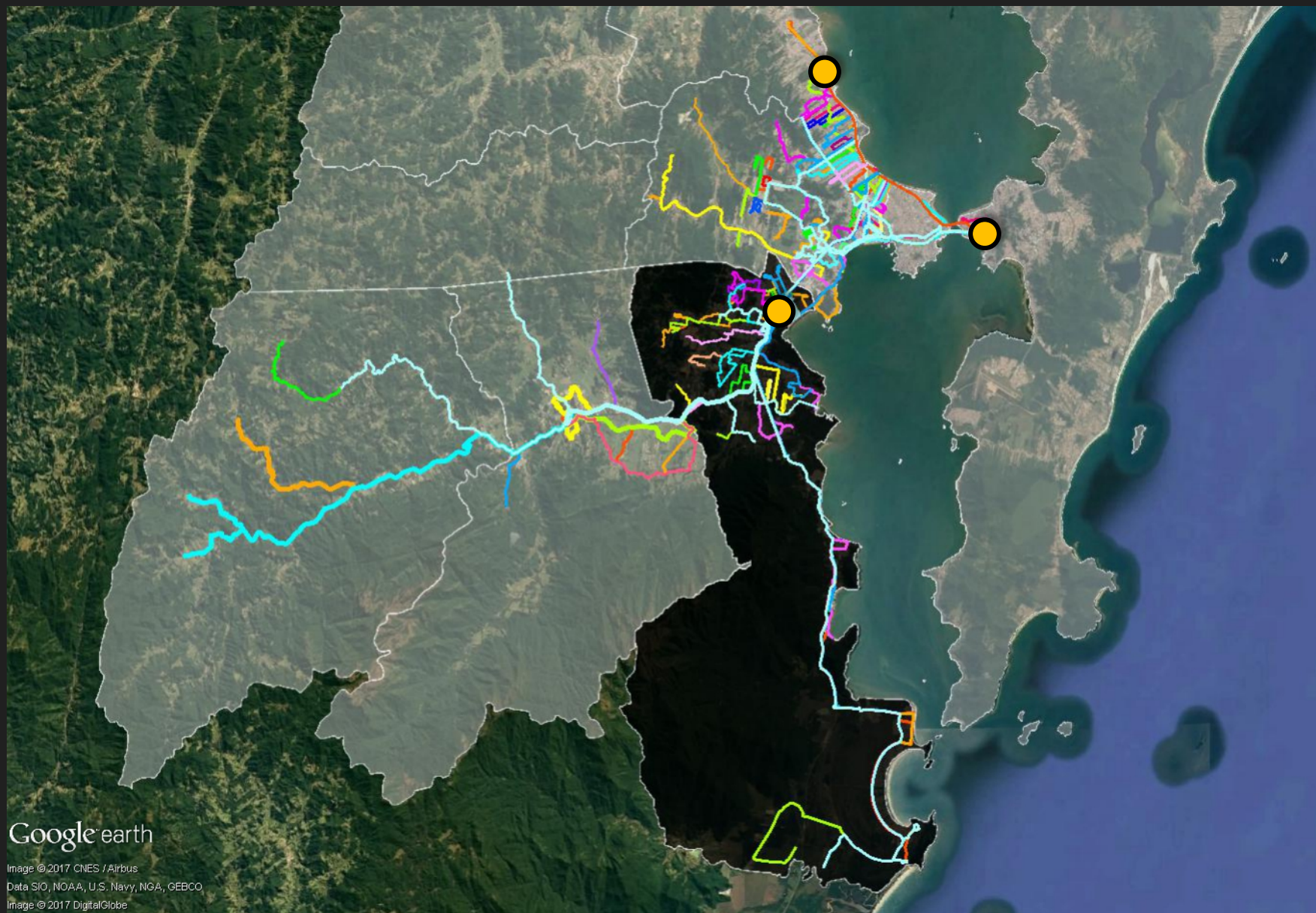
Santo Amaro da Imperatriz – Todas as Linhas



Águas Mornas – Palhoça



São José – Todas as Linhas

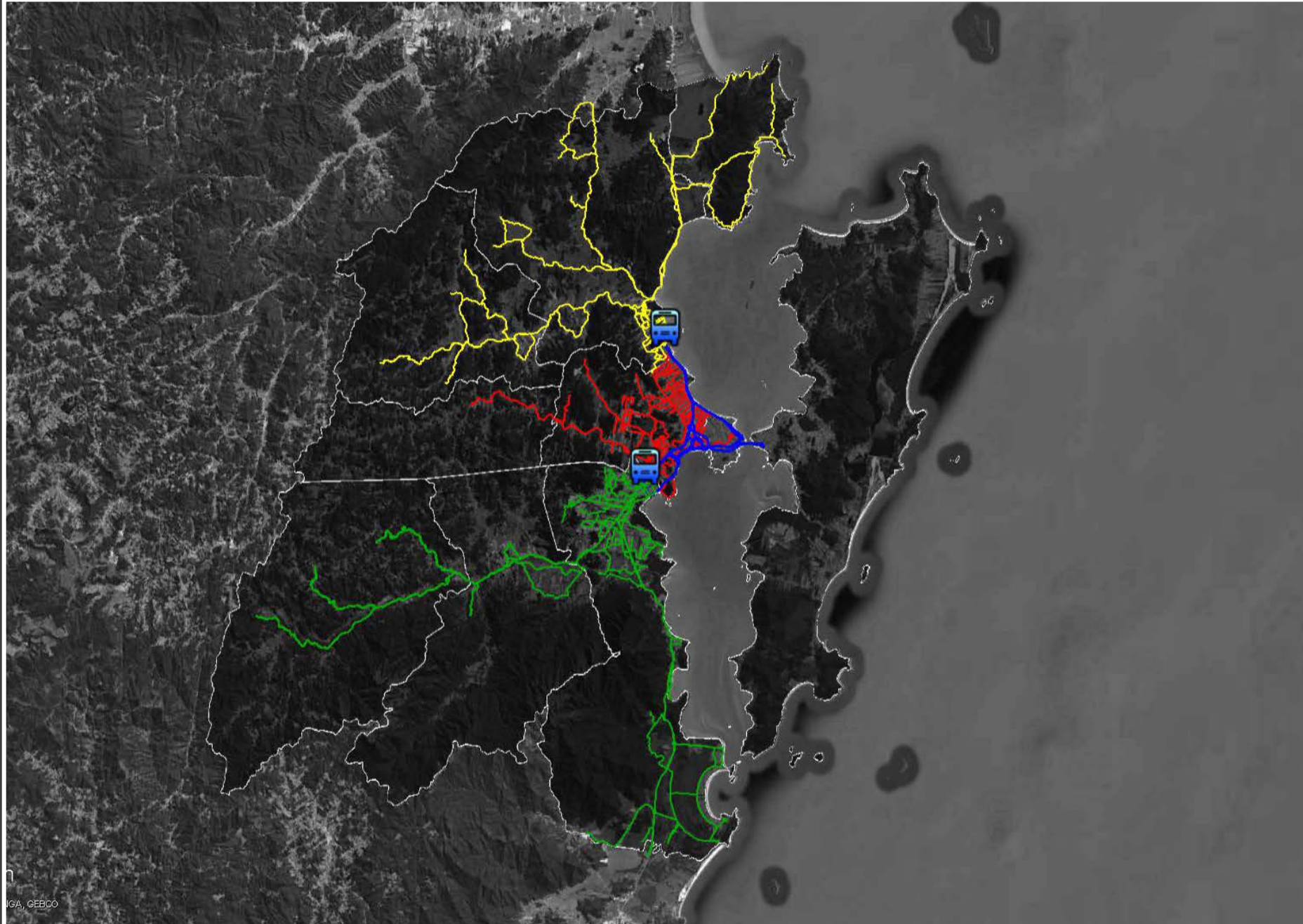


Google earth

Image © 2017 CNES / Airbus  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
Image © 2017 DigitalGlobe

# NOVA REDE INTEGRADA METROPOLITANA – ESTRUTURA

18.09.2017 - Apresentação Pública – Palhoça





# BENEFÍCIOS DO SISTEMA INTEGRADO

## Situação Atual X Proposta Sistema Integrado

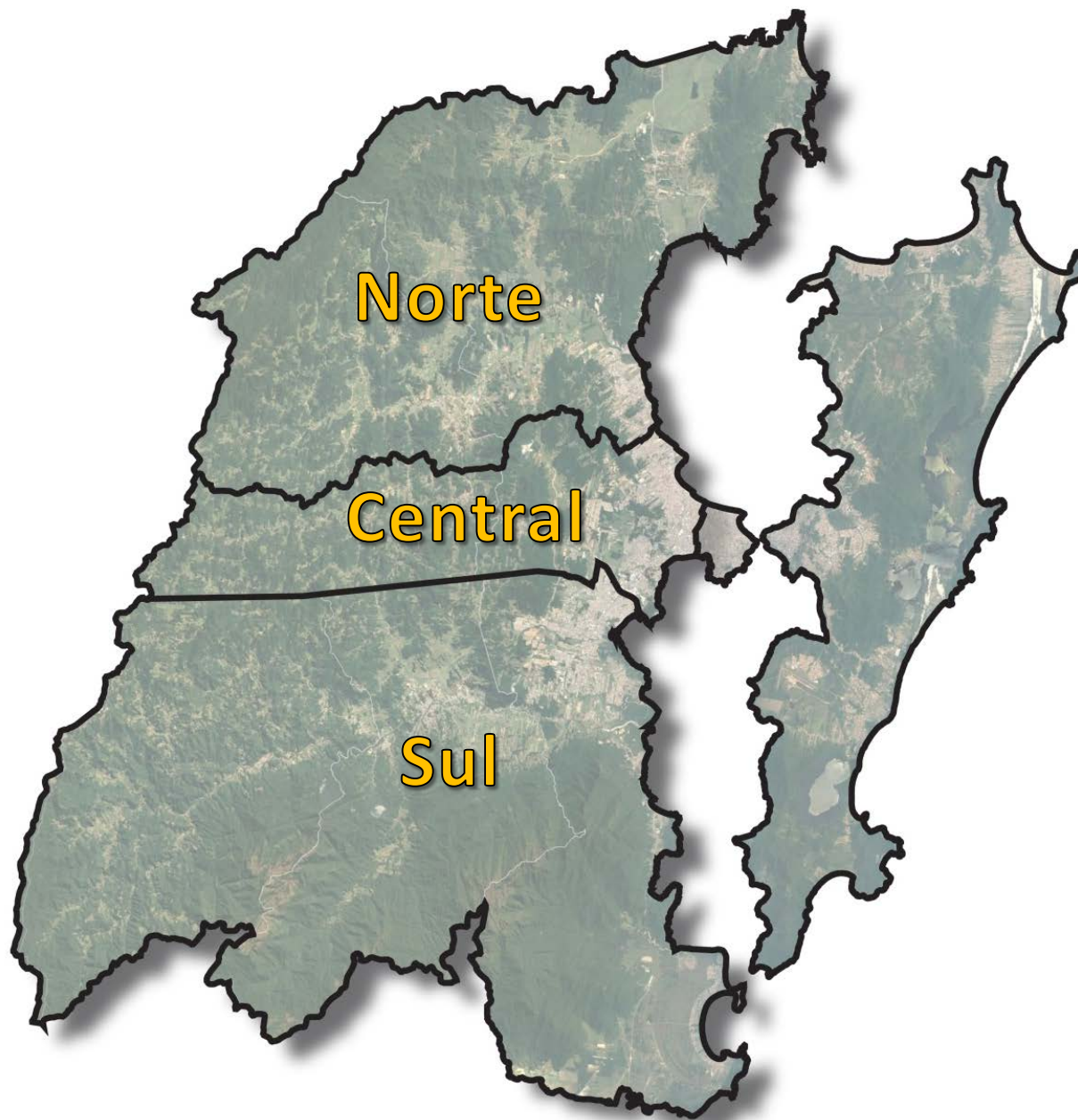
Indicador	Situação Atual	Sistema Integrado
<b>Frota</b>	403	370 <b>REDUÇÃO DE CUSTO</b>
<b>Linhas</b>	7	10 <b>AUMENTO DA FREQUÊNCIA</b>
<b>Serviços</b> (Origens e Destinos Integradas)	22	70 <b>AUMENTO DA OFERTA</b>
<b>Passageiros/dia</b>	150.000	150.000

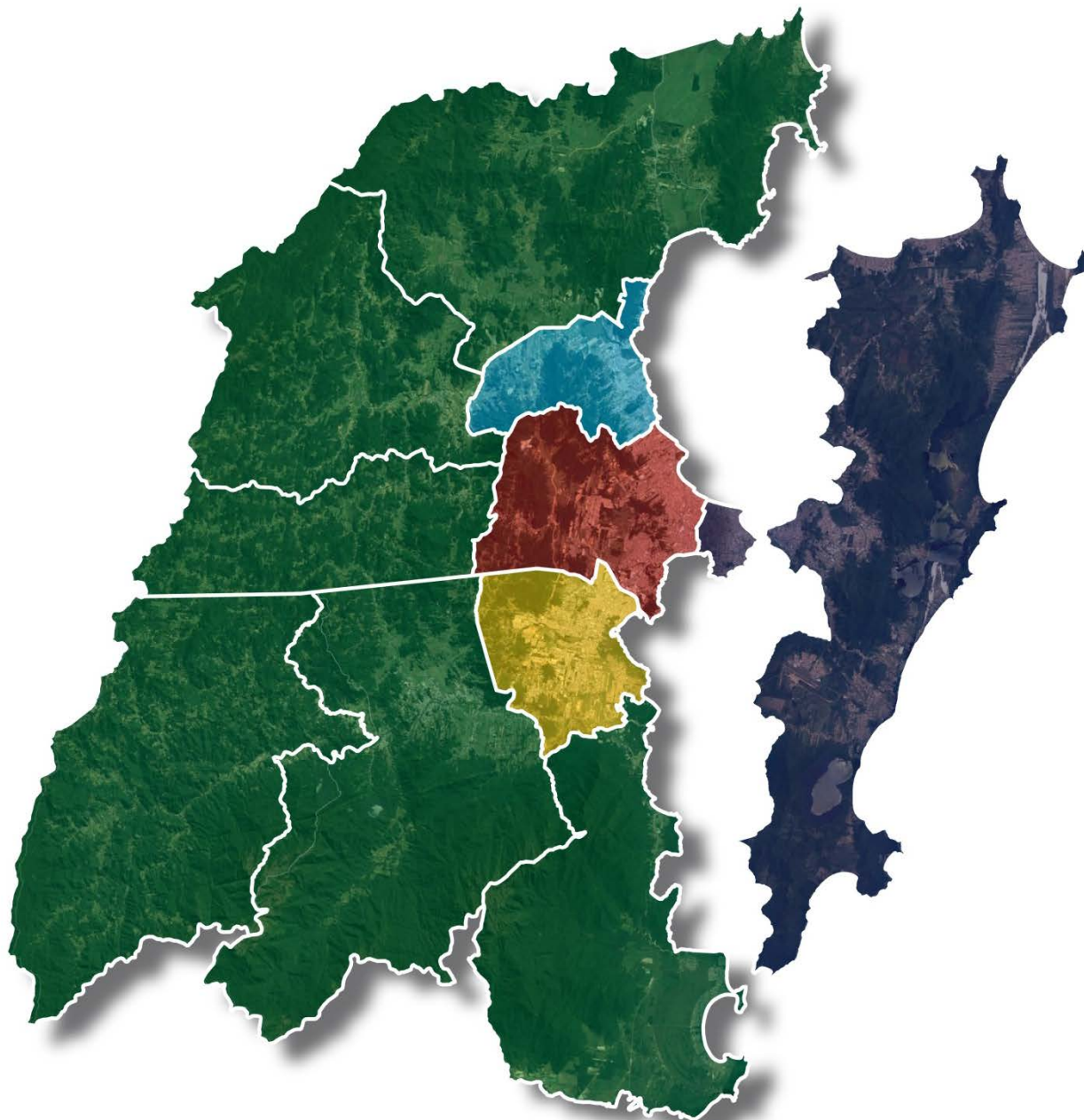


**1 CARTÃO**



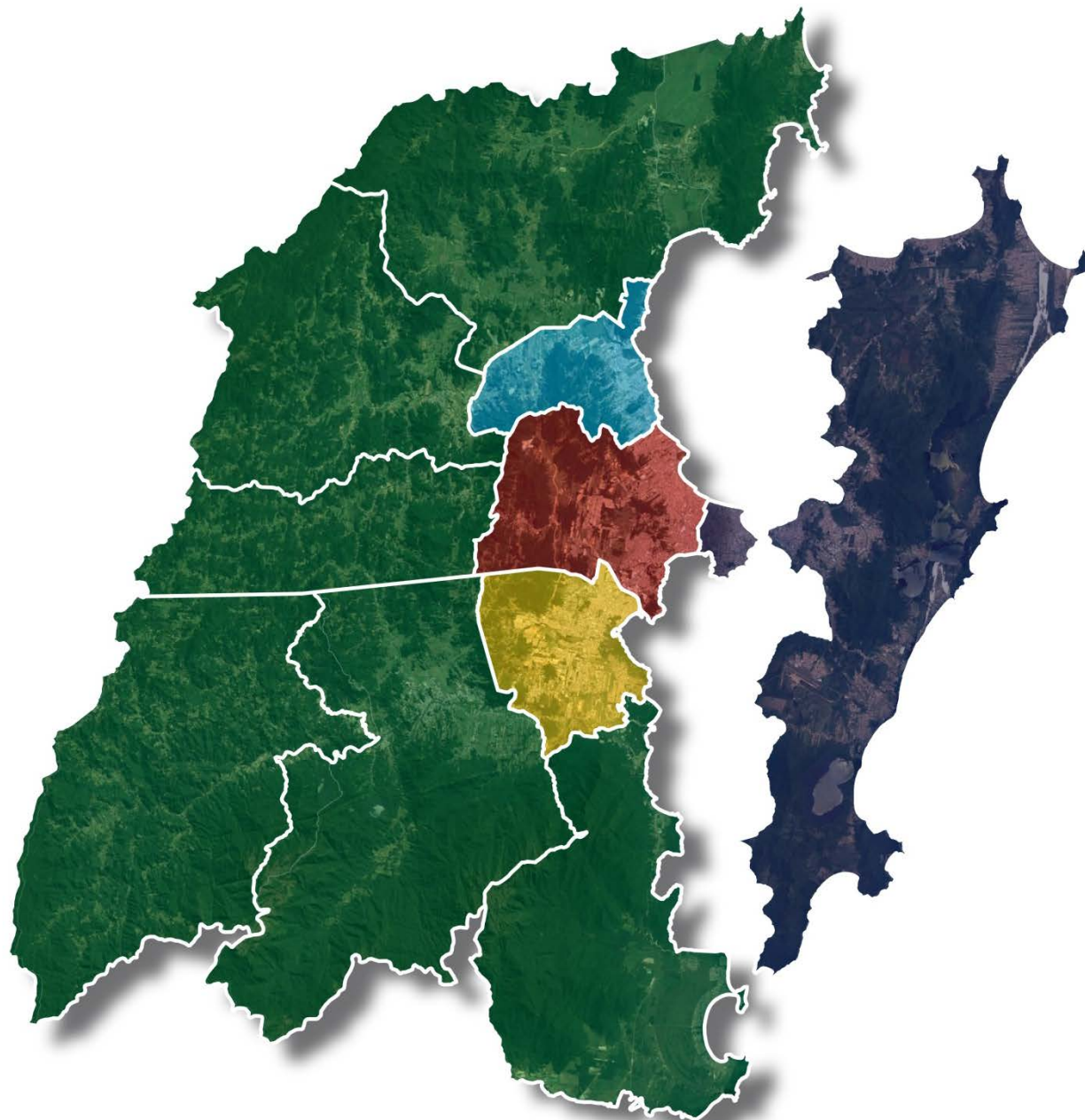
# PROPOSTA PRELIMINAR DE POLÍTICA TARIFÁRIA





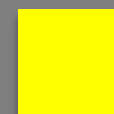
## 7 Patamares

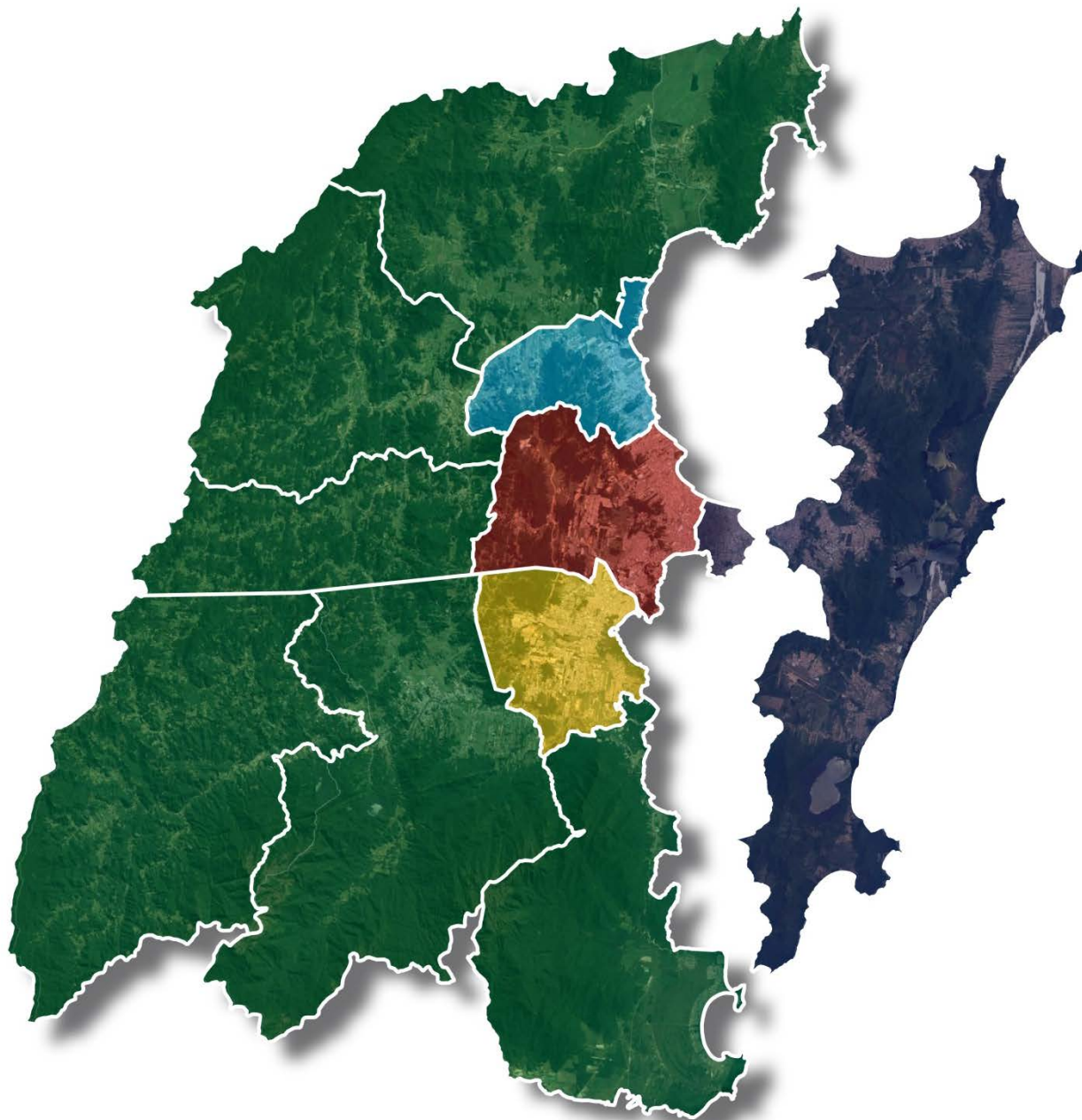
1. R\$ 3,80 a 4,30
2. R\$ 4,30 a 4,80
3. R\$ 5,70 a 6,20
4. R\$ 4,80 a 5,50
5. R\$ 5,50 a 6,20
6. R\$ 6,90 a 7,60
7. R\$ 9,00 a 9,70



## Patamar I

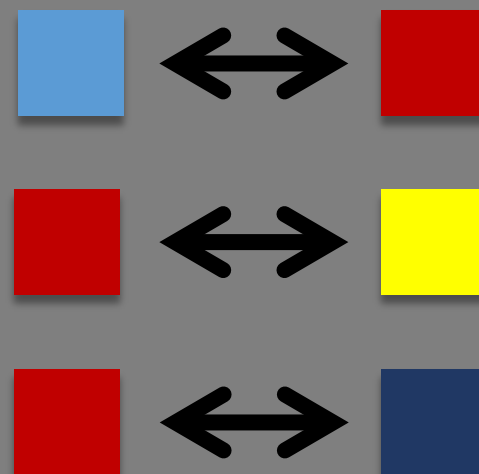
R\$ 3,80 a 4,30



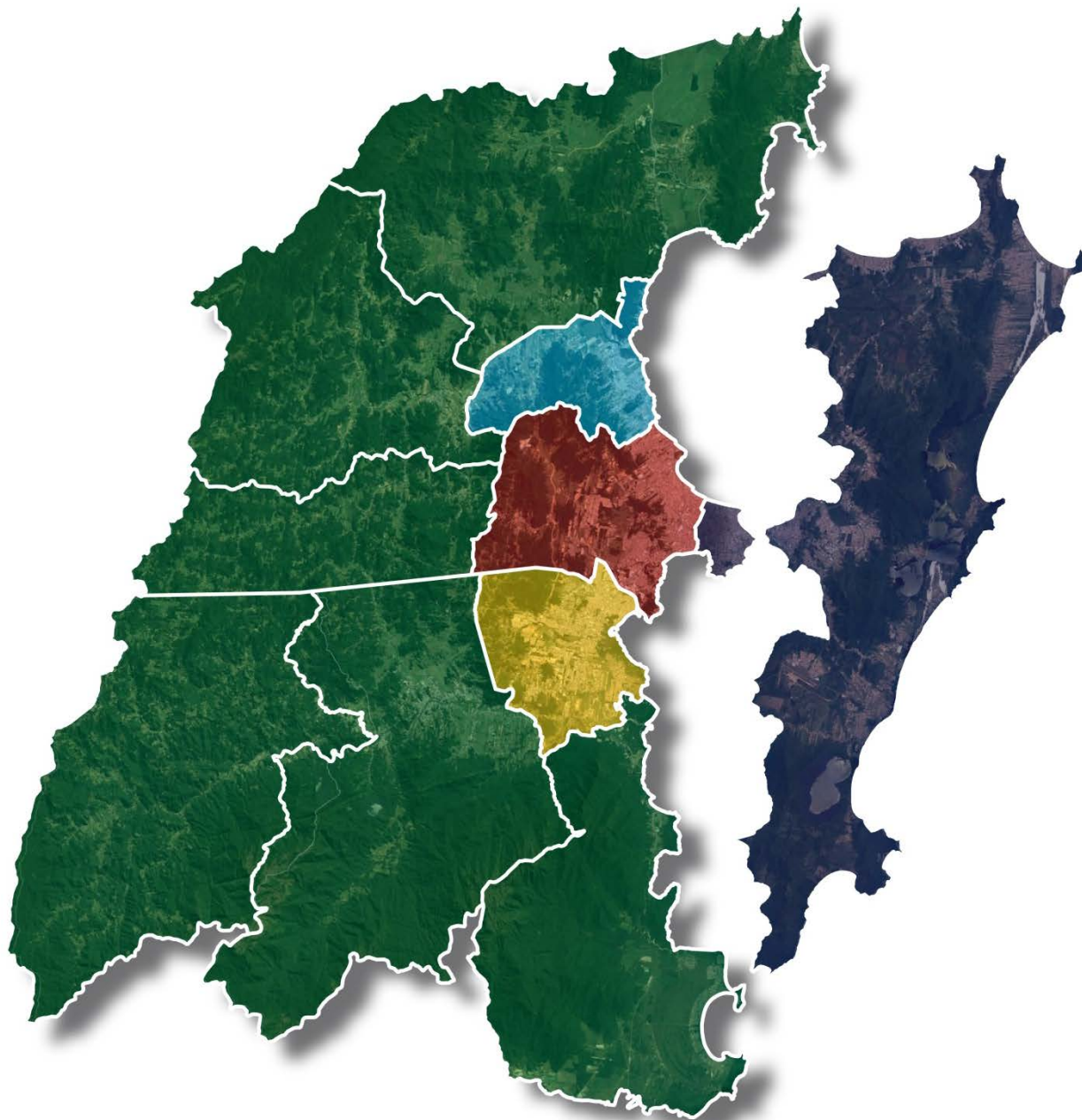


## Patamar 2

R\$ 4,30 a 4,80

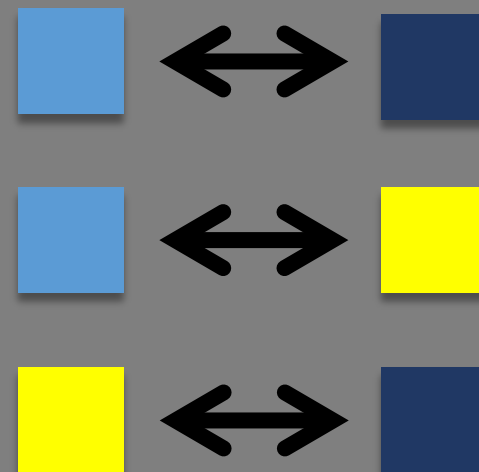


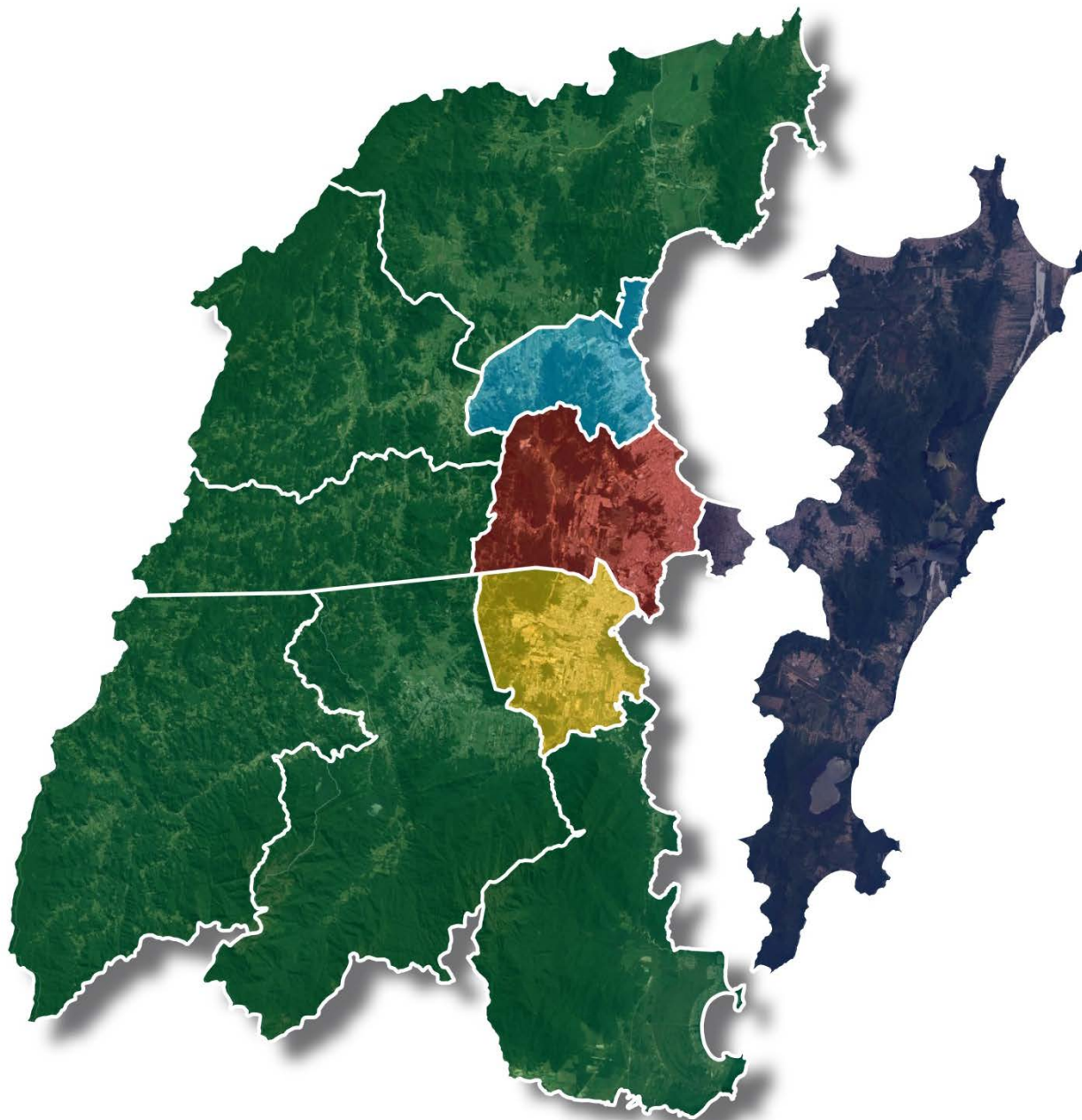




## Patamar 3

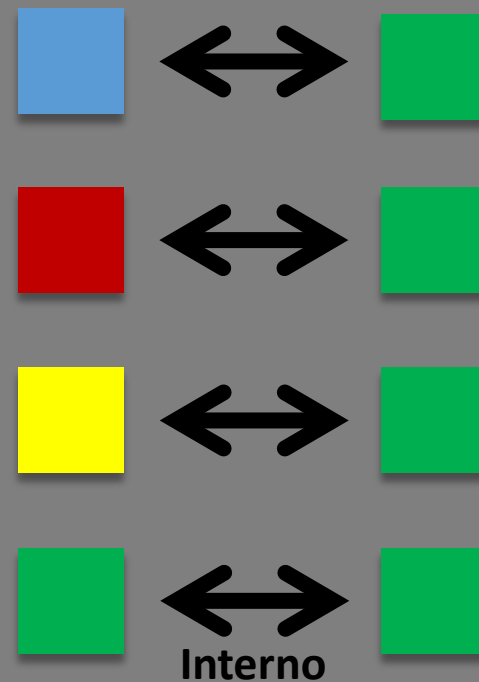
R\$ 5,70 a 6,20

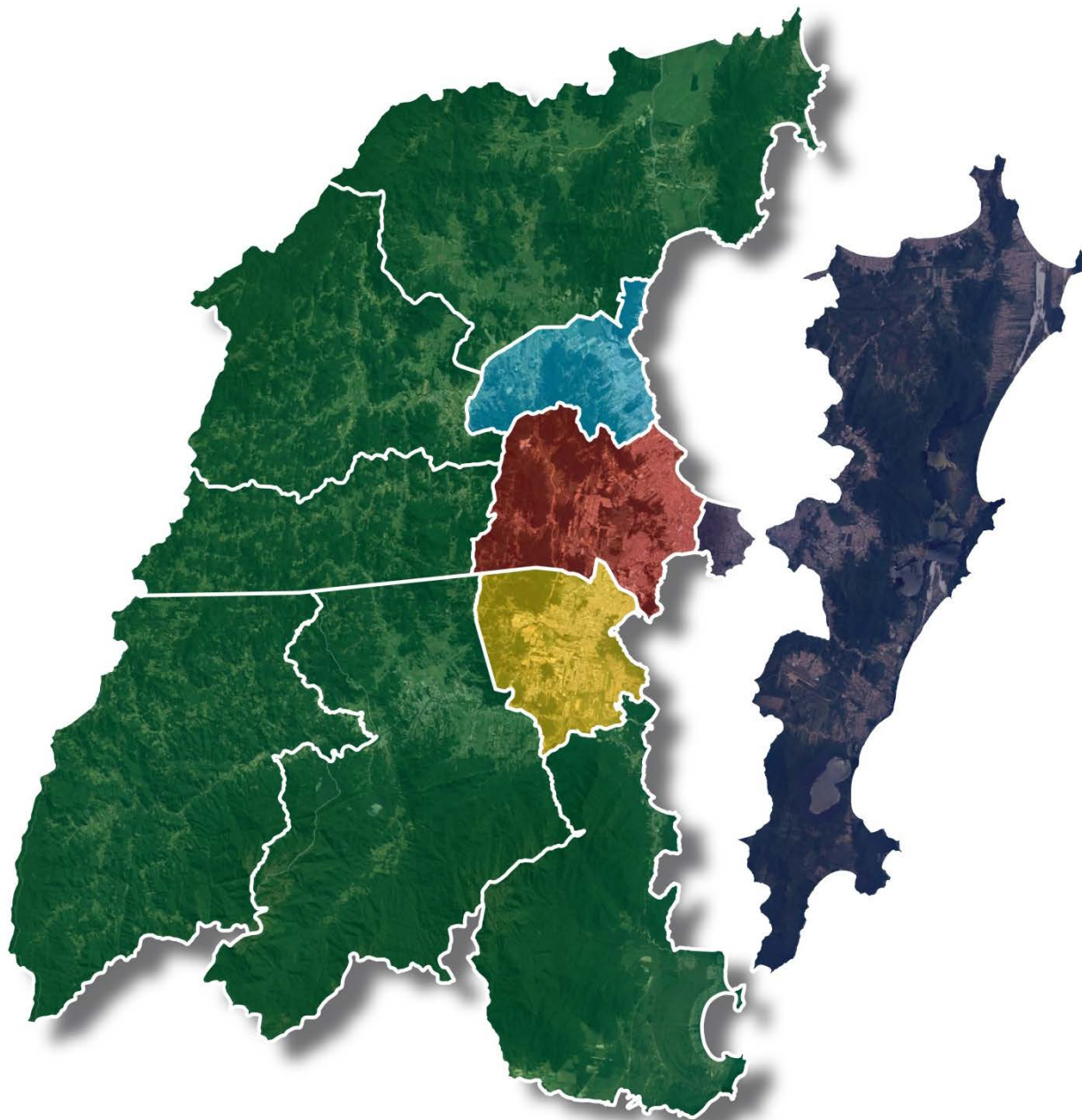




## Patamar 4

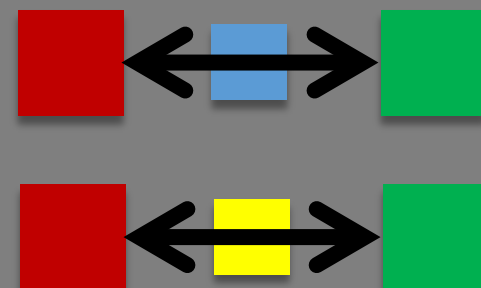
R\$ 4,80 a 5,50

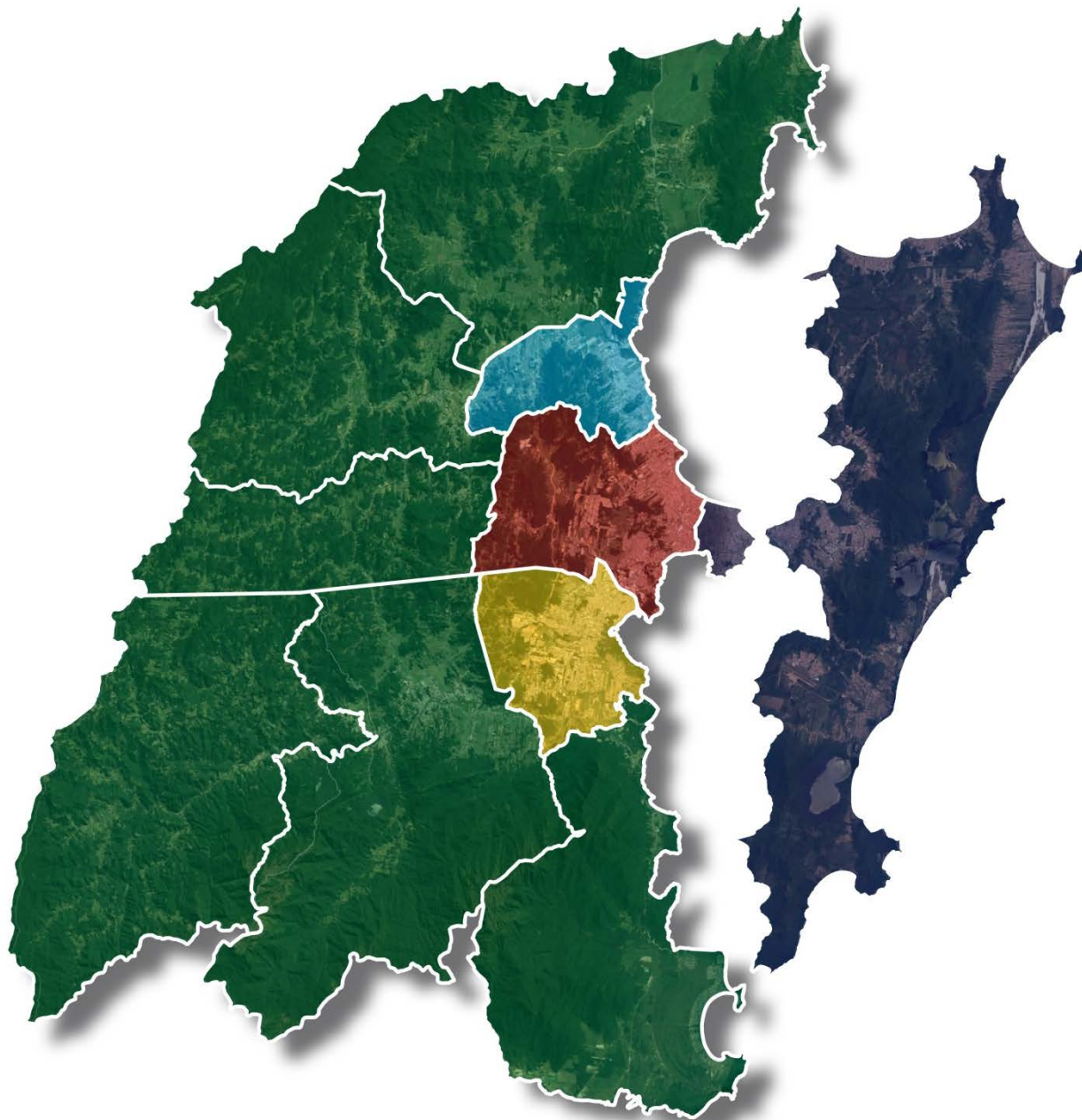




## Patamar 5

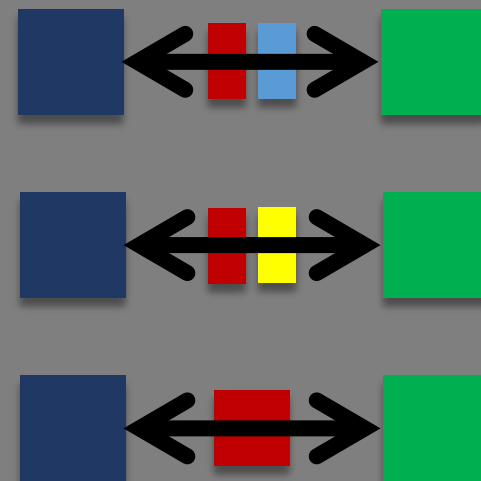
R\$ 5,50 a 6,20

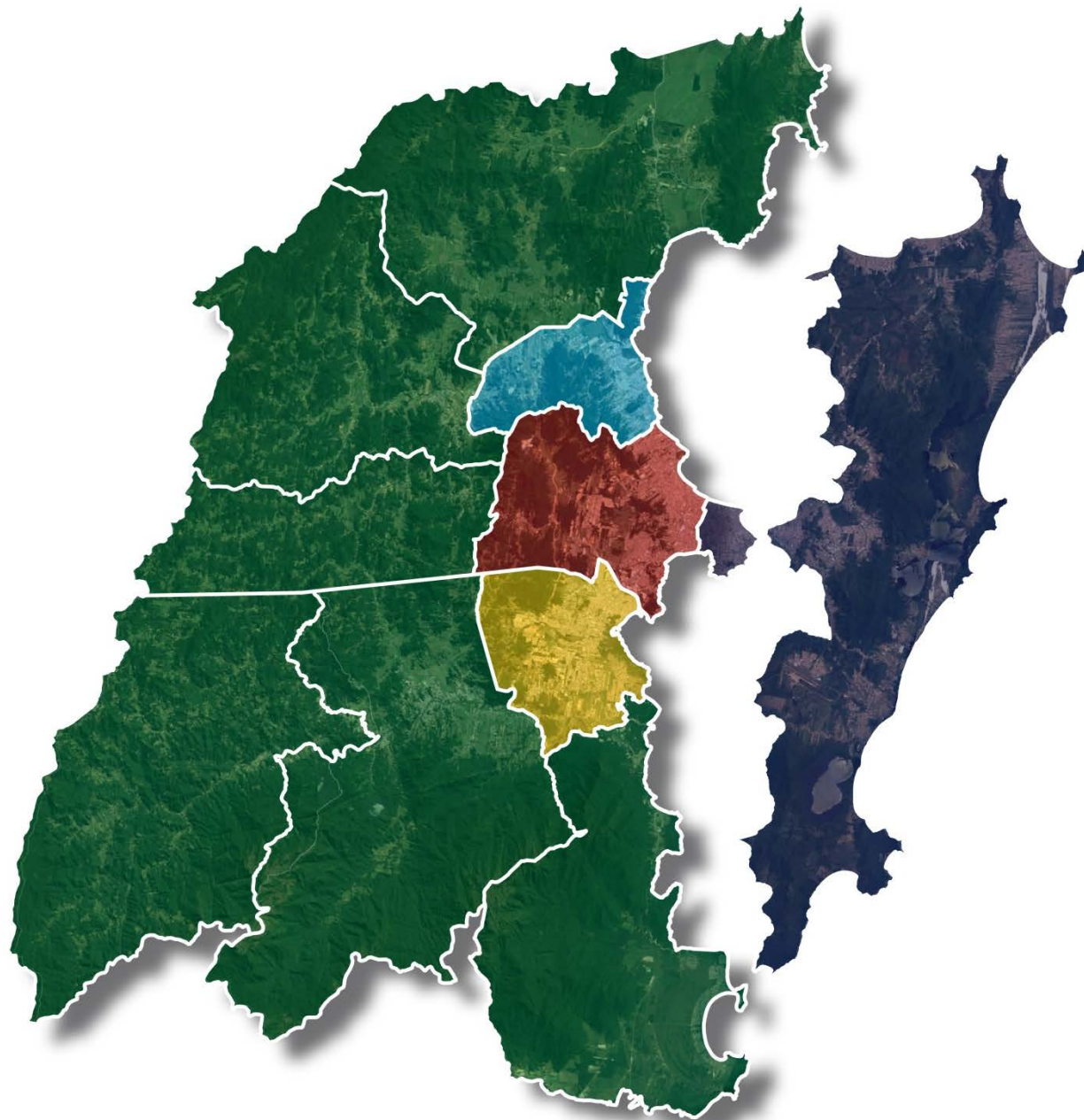




## Patamar 6

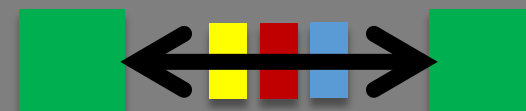
R\$ 6,90 a 7,60





Patamar 7

R\$ 9,00 a 9,70



# CARACTERÍSTICAS DA FROTA

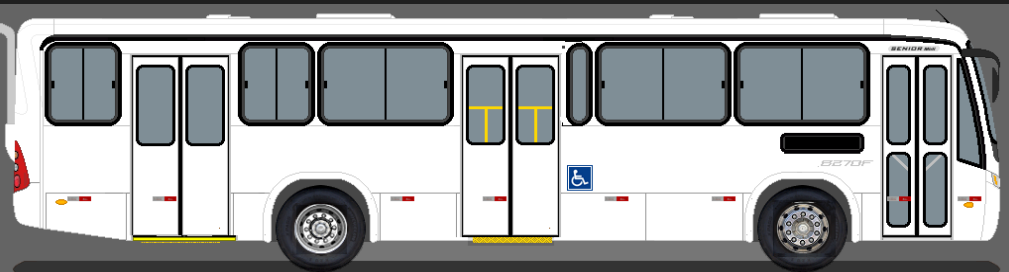
## TAMANHOS



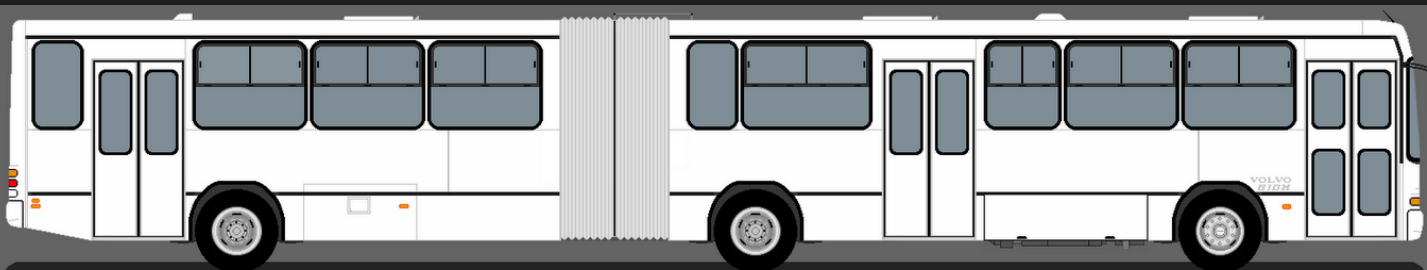
MICRO



MIDI



BÁSICO/PADRON



ARTICULADO

## PROPOSTA PRELIMINAR

- ① Ar-Condicionado nas Linhas Troncais
- ② Todos os veículos com acessibilidade universal
- ③ Incentivo para combustíveis menos poluentes
- ④ Frota experimental de alto padrão - 20 veículos
  - Motorização Híbrida (Diesel-Elétrico)
  - Motorização Elétrica
  - Motorização à Gás Natural
  - Ar-Condicionado
  - Piso Baixo
  - Janelas maiores
  - Internet Wi-Fi, conexões USB, etc.



# CONTROLE, OPERAÇÃO, BILHETAGEM E COMPRA DE CRÉDITOS

## PROPOSTA PRELIMINAR

- ① GPS e Telemetria em todos os veículos
- ② Novas tecnologias de pagamento
- ③ Tarifa diferenciada – CARTÃO x DINHEIRO
- ④ Difusão da venda de créditos
- ⑤ Compra de créditos com Débito e Crédito

**O Sistema Integrado Metropolitano  
trará mais benefícios para a  
população de Palhoça  
que qualquer novo sistema municipal.**

MUITO OBRIGADO!