

# Experience Feedback on the Design and Implementation of Measures/Solutions for the Hamster, in the Context of the Construction of the A355 Highway

**Conference "Conservation of the European hamster - challenges and perspectives. A compromise between infrastructure development, agriculture and biodiversity protection"**

**Poland, 27 February 2025**



Highway A355 in exploitation

# Summary

**A355 OVERVIEW**

**REDUCTION MEASURES**

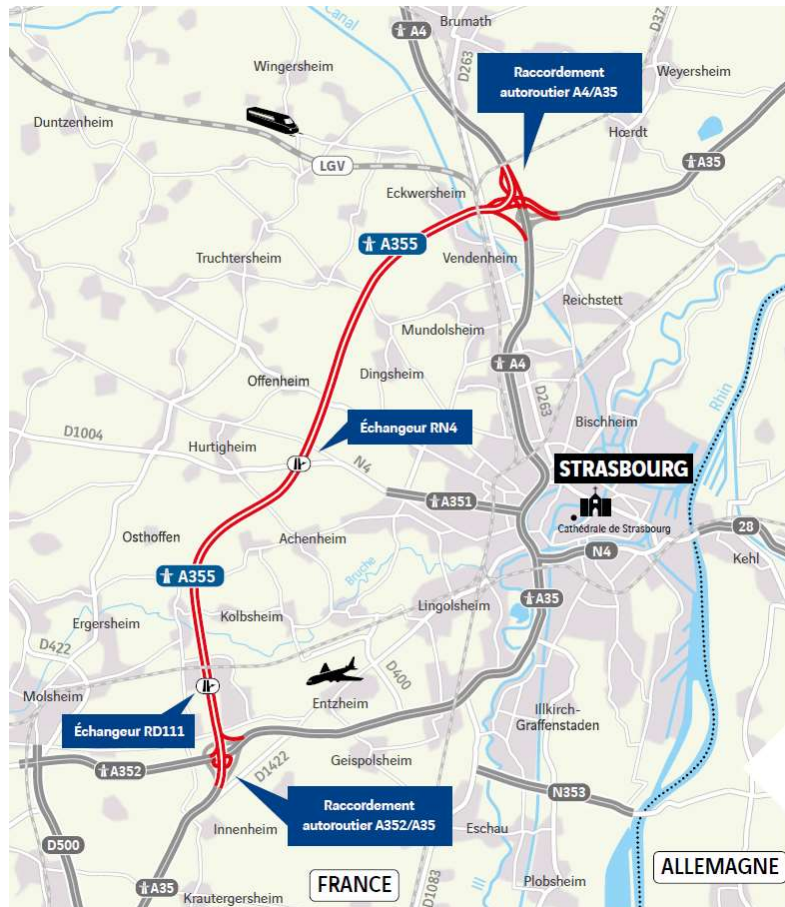
**COMPENSATION  
MEASURES**

**COMPENSATION  
MEASURES SPECIFIC  
HAMSTER MEASURES**





# A355 - Western Bypass of Strasbourg



**24 KM** d'autoroute à 2 x 2 voies



**22 COMMUNES CONCERNÉES :**

Achenheim, Berstett, Breuschwickersheim, Dingsheim, Duppigheim, Duttlenheim, Eckwersheim, Ernolsheim-Bruche, Geudertheim, Griesheim-sur-Souffel, Hurtigheim, Hœrdt, Innenheim, Ittenheim, Kolbsheim, Lampertheim, Oberschæffolsheim, Osthoffen, Pfulgriesheim, Stutzheim-Offenheim, Truchtersheim et Vendenheim



**4 AXES AUTOROUTIERS RACCORDÉS :**

A4, A35 nord, A35 sud et A352



**2 ÉCHANGEURS :**

N4 à Ittenheim et D111 à Duttlenheim



**3 OUVRAGES D'ART EXCEPTIONNELS :**

- Le viaduc de Vendenheim (456 m)
- La section couverte de Vendenheim (295 m)
- Le viaduc de la Bruche (462 m)



**47 CONTINUITÉS ROUTIÈRES**

**MAINTENUES :** RN, RD, voies communales et chemins agricoles



**11 COURS D'EAU ET 2 CANAUX**



**1 PÔLE MULTIMODAL** à Ittenheim



**1 AIRE DE SERVICES** à Duttlenheim



**20 000 À 34 000 VÉHICULES**

attendus en moyenne chaque jour à la mise en service



# Ecological Challenges

**3/4** of the land is agricultural parcels but classified as Static Protection Zone (hamster)

**11** watercourses + **2** canals

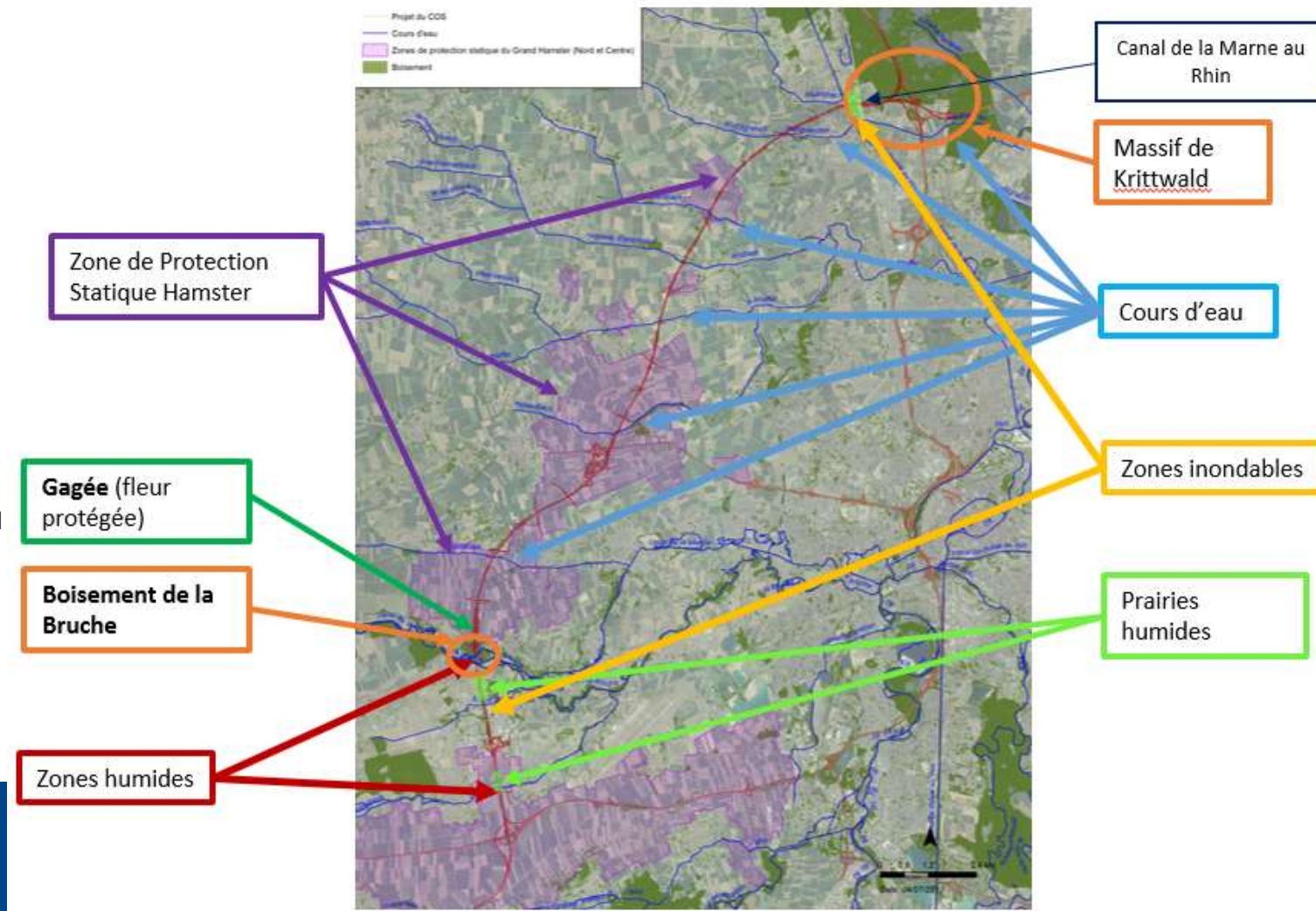
**25** ha of wetlands (mainly near watercourses)

**20** ha of flood zones

**2** wooded areas including the Krittwald state forest and the wet woodland of the Bruche alluvial valley

**137** protected animal species+

**1** protected plant species (gagée)





# Environment across all operations

## Avoid

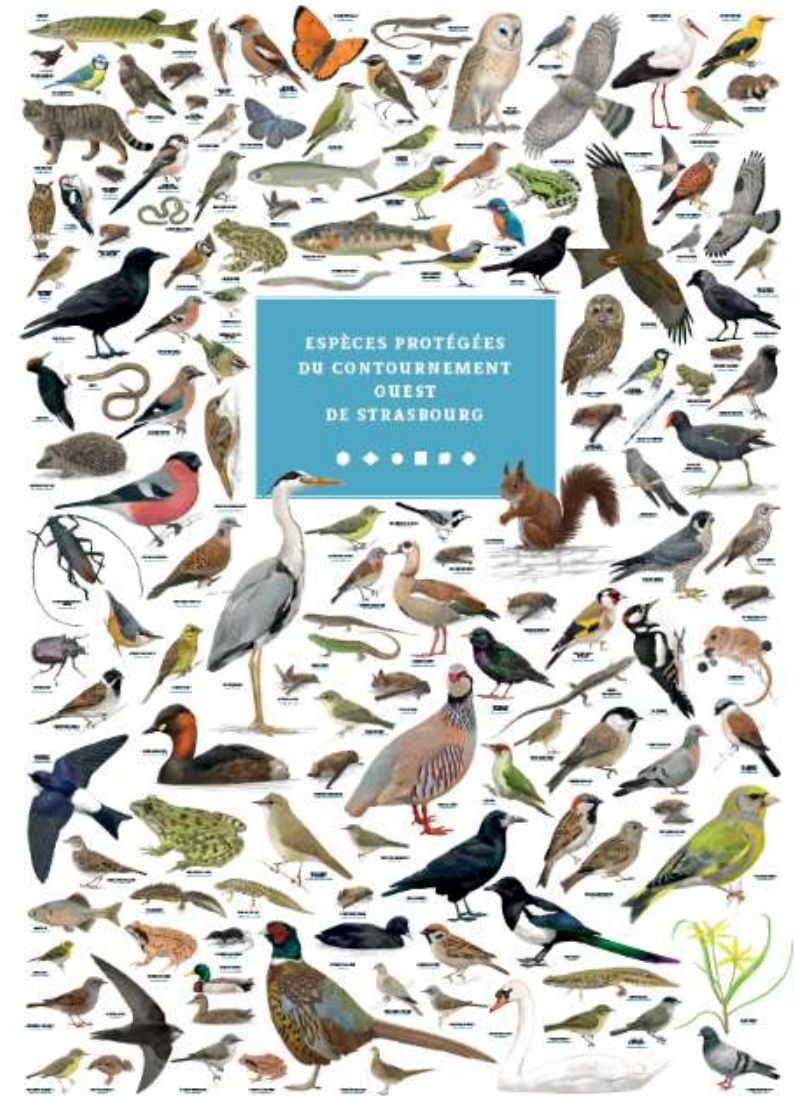
Is my project necessary ?  
Can I do it elsewhere ?

## Reduce

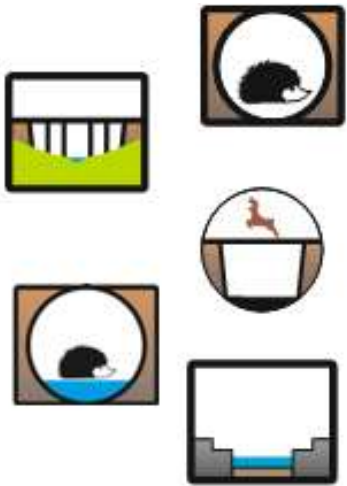
Can I do my project differently ?

## Compensate

I recreate as much or more than what I destroy.



## Reduction Measures



130

**transparency  
structures**

**Adapt  
frequency to  
the sensitivity  
of the  
environment**

1. Utilize all interruptions of long excavations
2. Account for mixed hydraulic structures / small fauna under the condition of drying at least half the time
3. Complete the network with dry culverts and pipes

3

Ecoponts

51

Specific ecoducs

42

Mixed ecoducs

20

Large fauna passages

2

Hamstéroducts

9

Bioducs

2

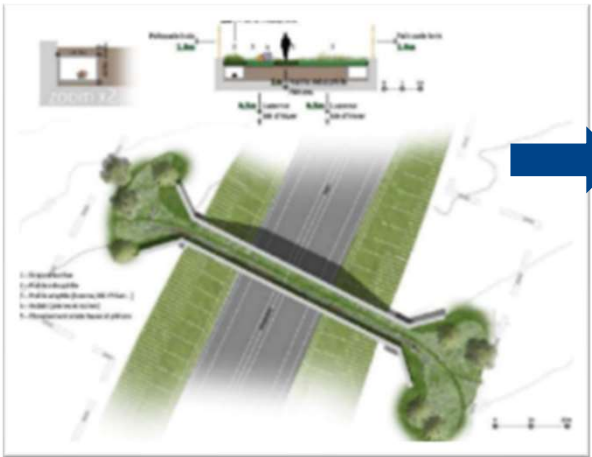
Viaducs

1

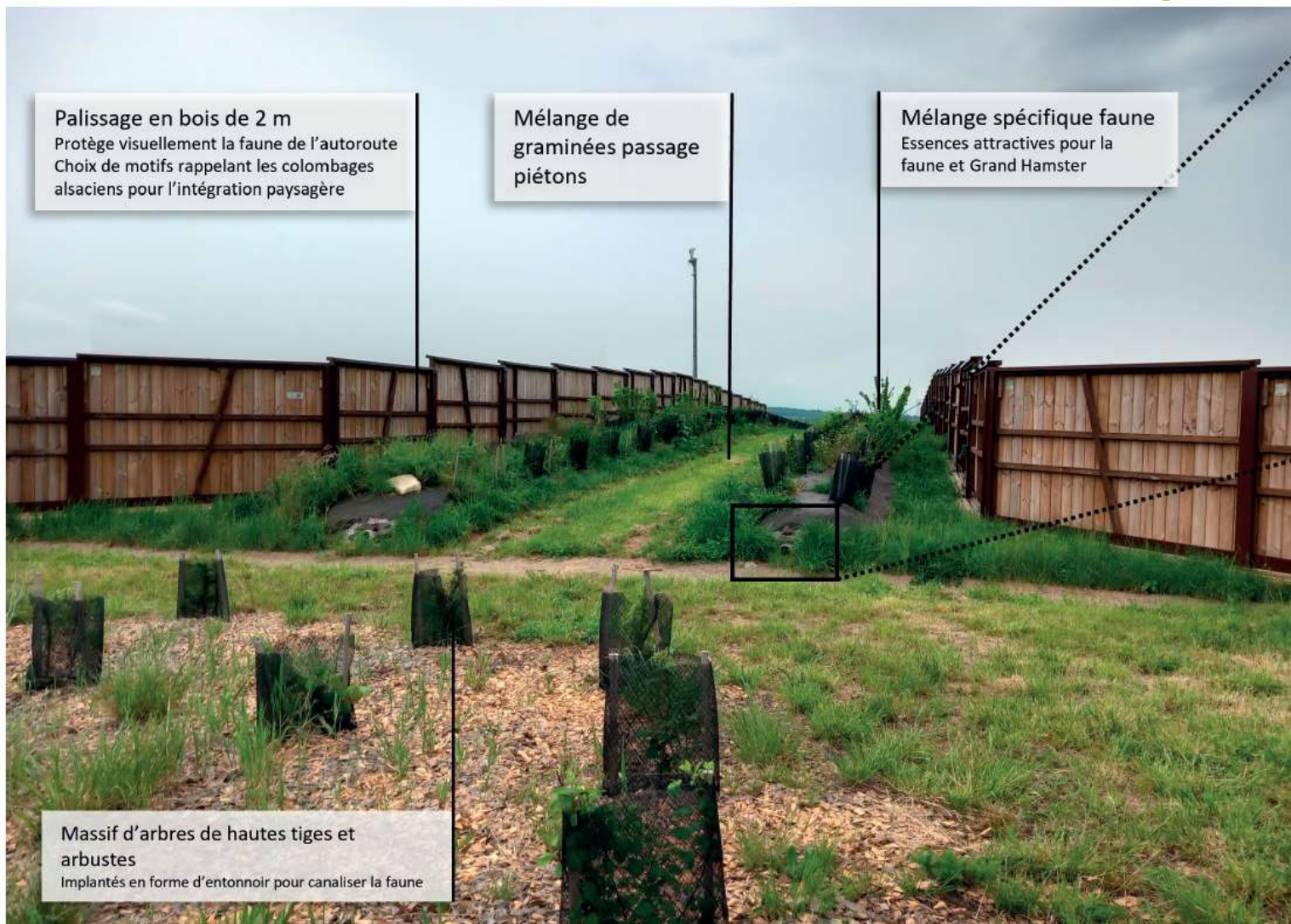
Covered trench



# Reduction Measures





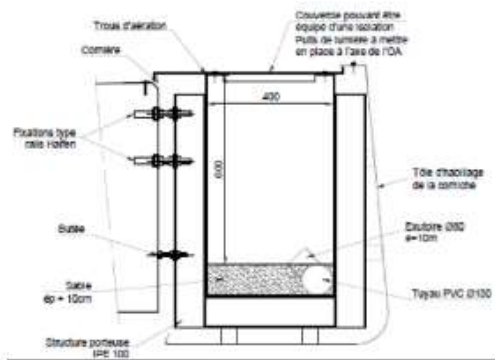




# Reduction Measures



## Design



Strada: strada comunale alla Nord

Linea 100

Scale: 1:1000

North arrow

Dimensions: 100m, 50m, 20m, 10m, 5m, 2m, 1m, 0.5m, 0.2m, 0.1m

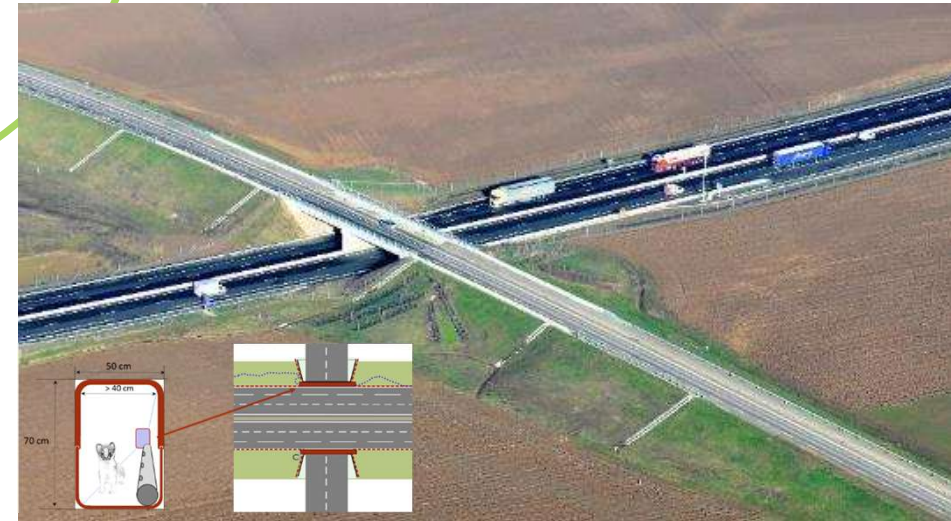
Technical drawing of a railway crossing with a road. The drawing shows a road crossing a railway track. The road is labeled 'Strada: strada comunale alla Nord'. The railway track is labeled 'Linea 100'. The drawing includes a north arrow, a scale bar, and various technical annotations and dimensions.

Principe d'aménagement des talus de raccordement au bioduc.



# Bioduc : An Innovation of the A355

## Implementation



# Bioduc : An Innovation of the A355

## Monitoring





# Compensation Measures

**12 sites**

Hamster compensatory measure

**15 sites**

In-situ compensatory measures

**25 sites**

Ex-situ compensatory measures

**+1300 ha**

Compensation area  
with **130 ha** for wetlands

**48 ha**

Compensatory woodlands

**54 ans**

years of securisation



# Compensation Measures

**Implementation of all compensatory measures on all in-situ and ex-situ sites before the end of the works**

**100% of the surface of compensatory measures is controlled in terms of land and use**

- Sowing on 106 ha
- Restoration of 90 ha of forest
- Creation of 16,282 m<sup>2</sup> of ponds
- Re-meandering of 1,680 ml of watercourses

**Functionality monitoring for 54 years**



Site 22 Dachstein



Site 9 Behlenheim



Site 24 La Robertsau



Site 29 Reichstett



# Hamster Compensation Measures

## Agricultural measures in favor of the European Hamster:

- Individual intensive measures sectors where 100% of parcels are covered with crops favorable to the Hamster (total area of 83 ha)
- Collective intensive measures sectors where at least 50% of parcels are covered with crops favorable to the Hamster (total area of 204.5 ha)
- Collective extensive measures sectors where at least 26% of parcels are covered with favorable crops (total area of 714 ha)

Compensatory measures zones occupy a total area of 10.1 km<sup>2</sup>



	2020			2021			2022		
	Nombre de terriers recensés	Surface prospectée	Nombre de terrier/ha de surface prospectée	Nombre de terriers	Surface prospectée	Nombre de terrier/ha de surface prospectée	Nombre de terriers	Surface prospectée	Nombre de terrier/ha de surface prospectée
Zone périphérique emprise travaux	1	51, 3 ha	0,02	5	372,6 ha	0,01	-	-	-
Secteur de mesures individuelles très intensive	56	84 ha	0,67	61	78 ha	0,78	75	81,9 ha	0,92
Secteur de mesure collective intensive	42	115,7 ha	0,36	58	118,6 ha	0,49	74	124 ha	0,60
Secteur de mesure collective extensive	-	-	-	55	397,7 ha	0,14	156	321 ha	0,49
<b>Total</b>	<b>99</b>	<b>251 ha</b>	<b>-</b>	<b>179</b>	<b>967 ha</b>	<b>-</b>	<b>305</b>	<b>527 ha</b>	<b>-</b>

# Hamster Compensation Measures

## Partnership with the Chamber of Agriculture and AFSAL:

- A perimeter of 1000 ha including 470 ha of crops favorable to the hamster

## Hamster release operations:

- At least 1030 individuals

## Collaboration with CNRS for the establishment of a breeding program in the RN4 interchange

## 4 theses started during construction, with results being published:

- Mercury Agrion
- Hamster (study of favorable cultivation practices)
- Bats
- Hamster (study on the behavioral biology of the hamster)





# Optimization of Land Use



Small fauna passage

Bioduc

Mixed large fauna passage

In-situ compensation

Ex-situ compensation



For more information:



**AUTOROUTE A355**  
Contournement Ouest de Strasbourg

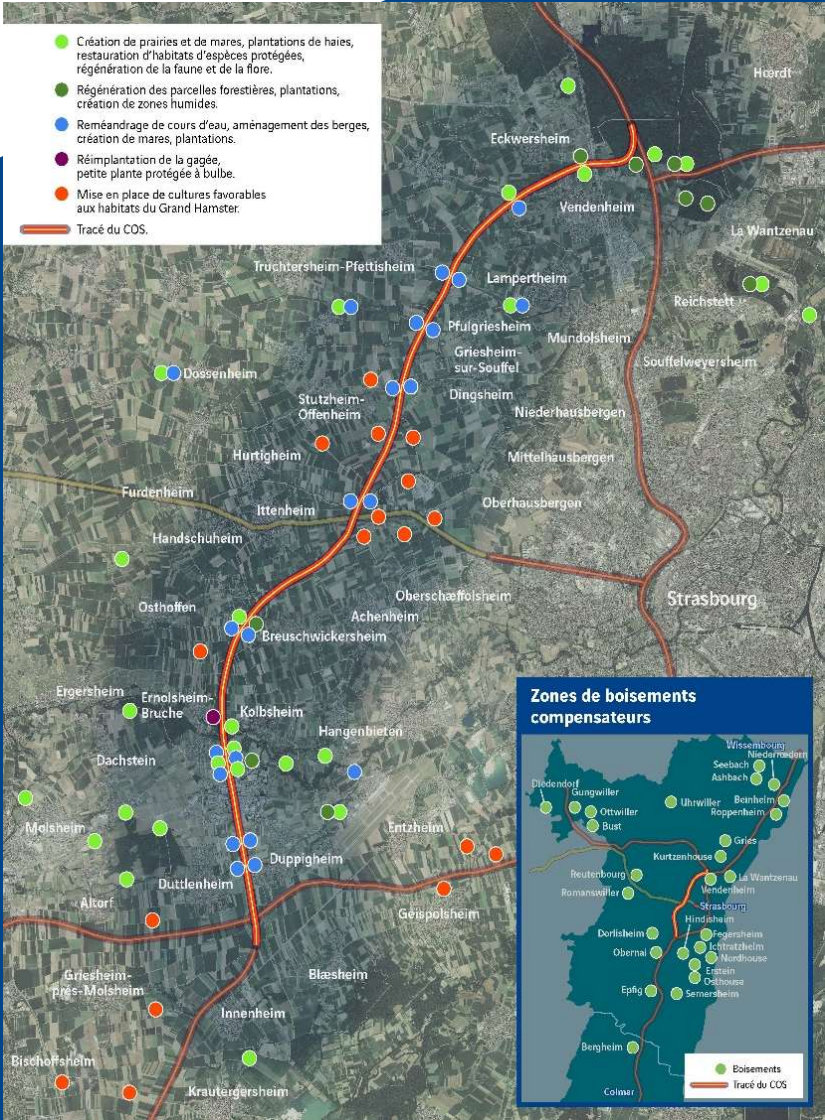
Janvier 2024



BILAN ENVIRONNEMENTAL  
INTERMEDIAIRE  
Focus sur le Grand Hamster

BILAN ENVIRONNEMENTAL  
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réseau ARCOS





Thanks for your  
attention !  
Any questions ?



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