

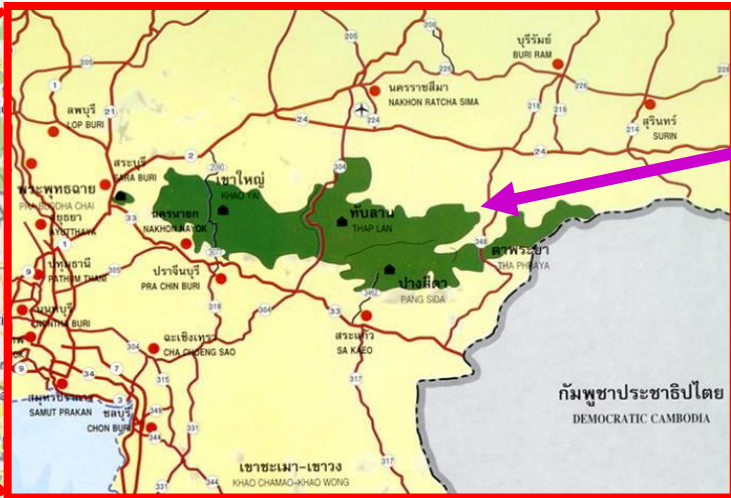
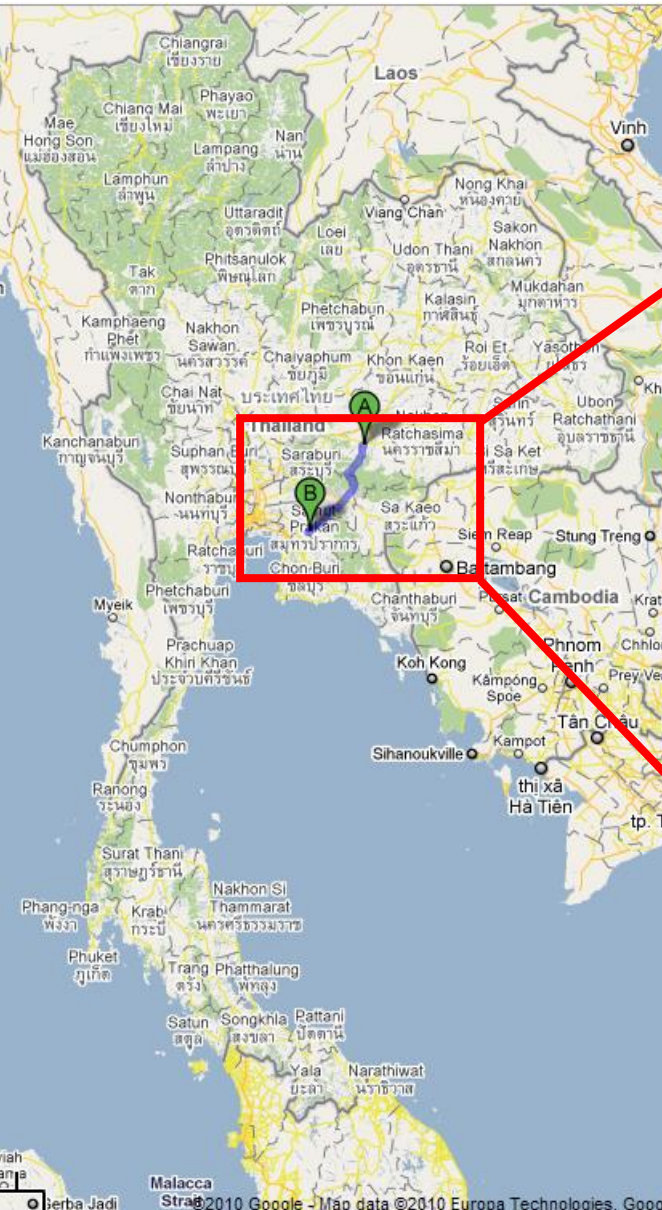


Introduction of Transportation Infrastructure and Ecological Protection Practices : Thailand

Highway 304 Wildlife Corridor Project Department of Highway

Present by
Chuthinthon Mankhong
Office of Transport and Traffic Policy and
Planning
Ministry of Transport

Project location

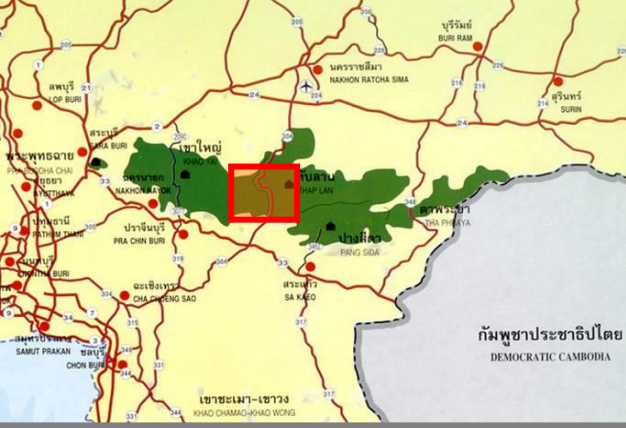


Dong Phrayayen-Khao Yai Forest Complex



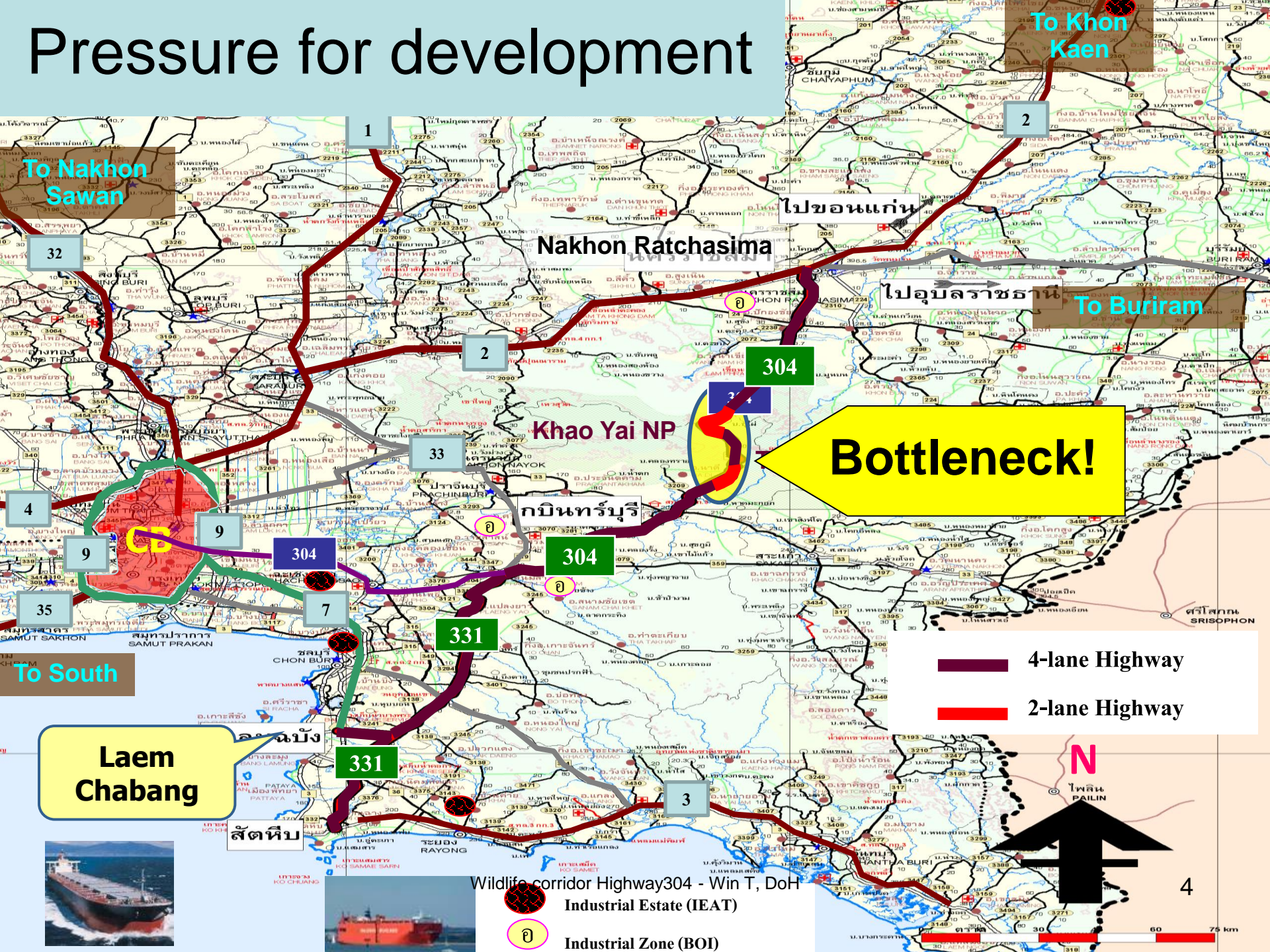
UNESCO World Heritage Site

Project location



Wildlife Corridor Highway 304 - Win T, DoH

Pressure for development



Wildlife corridor Highway304 - Win T, DoH

Industrial Estate (IEAT)

Industrial Zone (BOI)

Pressure for development: **Safety issue**



Wildlife corridor Highway304 - Win T, DoH

Pressure for bridging the national parks

Upon inscription of **Dong Phrayayen-Khao Yai Forest Complex** as a World Heritage Site

(29th session of World Heritage Commission, Durban, 2005)

*Requests the State Party of Thailand to carry out a study for the establishment of **ecologically effective wildlife corridors** to functionally link the western and eastern sectors of the complex, ...*



Ecosystem study



Ecosystem study



Ecosystem study



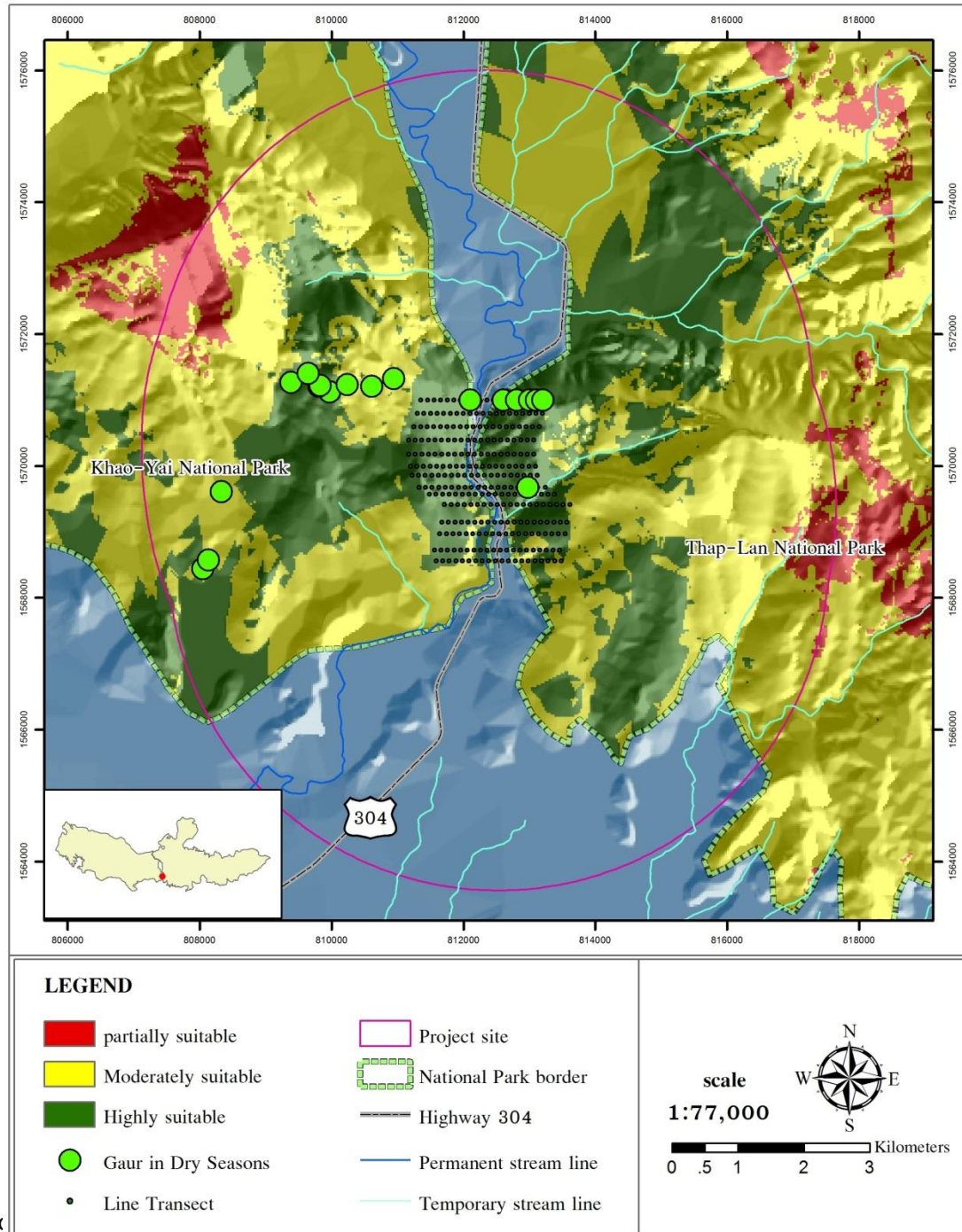
Habitat Suitability

Factors:

- Elevation
- Slope
- Streams
- Salt lick
- Roads
- Village

Consider for:

- Guar
- Sambar
- Southern Red Muntjac
- Elephant
- Bear
- Dear



Wildlife observation

(km 42 – km 57)



ห้วยชันบอน

ร.ร..บ้านศาลเจ้าพ่อ

หน่วยพิทักษ์ฯถ.5

★ หมูป่า, เก้ง, พังพอน

★ หมูป่า

★ หมิวค้าย

★ งูเห่าล้อม

★ ลิง, ตะกอก

~ พื้นที่เดินสำรวจ (ไม่รวมตามเส้นทางที่เป็นถนนในพื้นที่โครงการฯ)



สถานีอนามัยกม.80

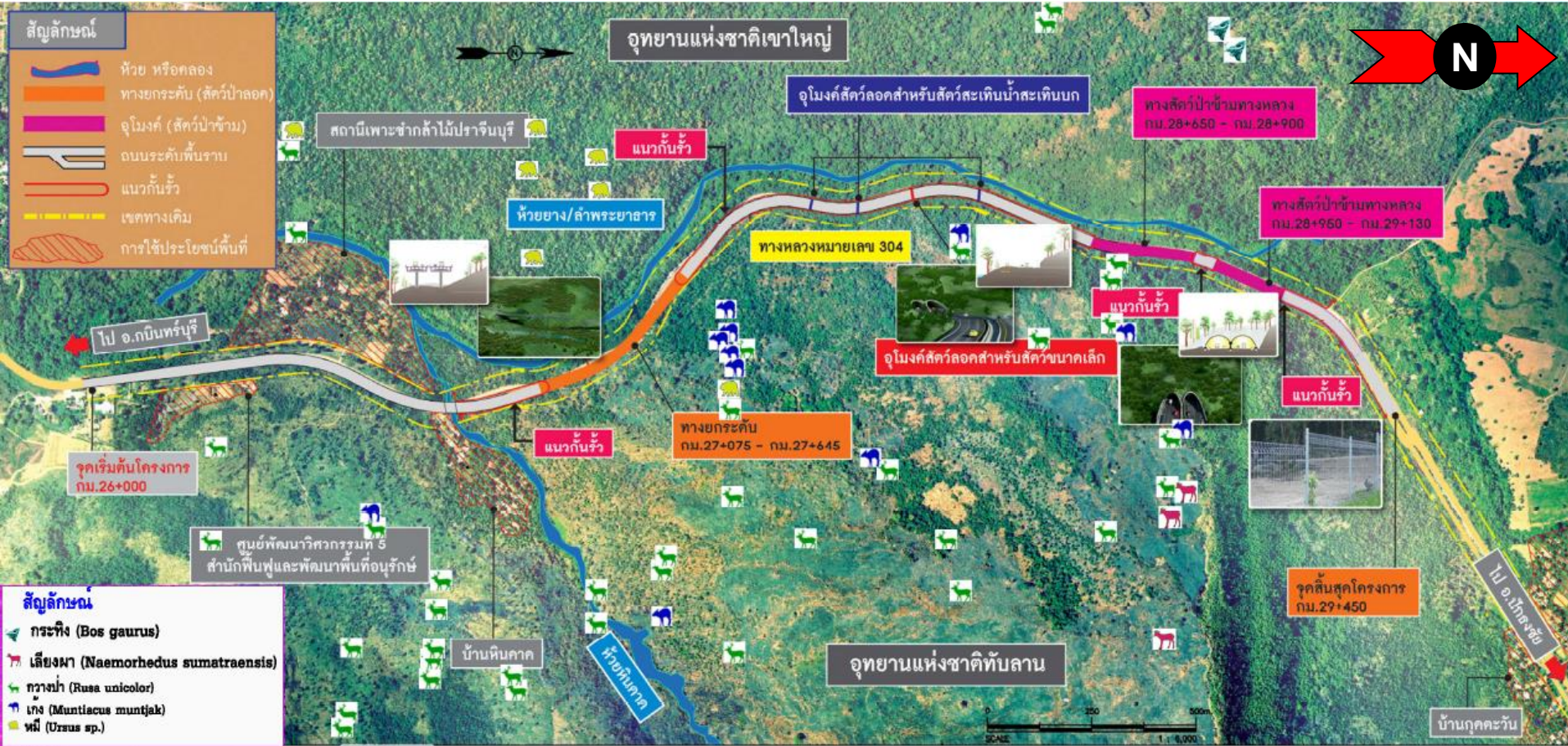
Highway 304
km. 42

Wildlife corridor Highway304 - Win T, DoH

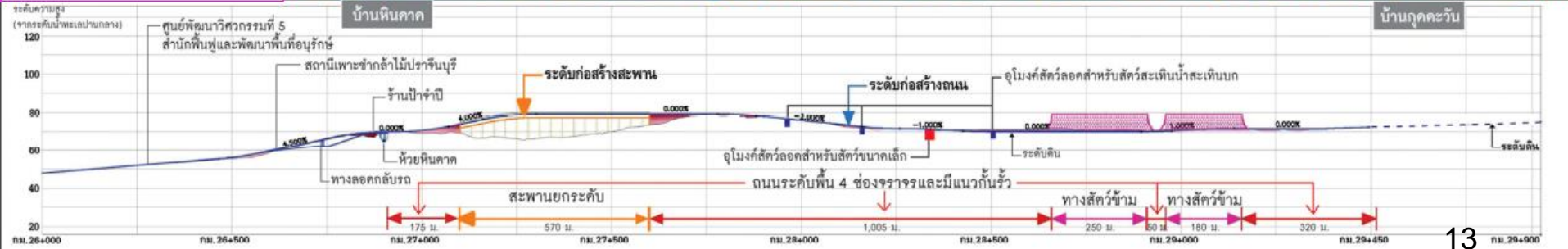
Highlights of wildlife corridor project on Highway 304

- Wildlife corridor construction
- Reforestation
- Habitat enhancement
- Wildlife crossing monitoring
- Road impact mitigation

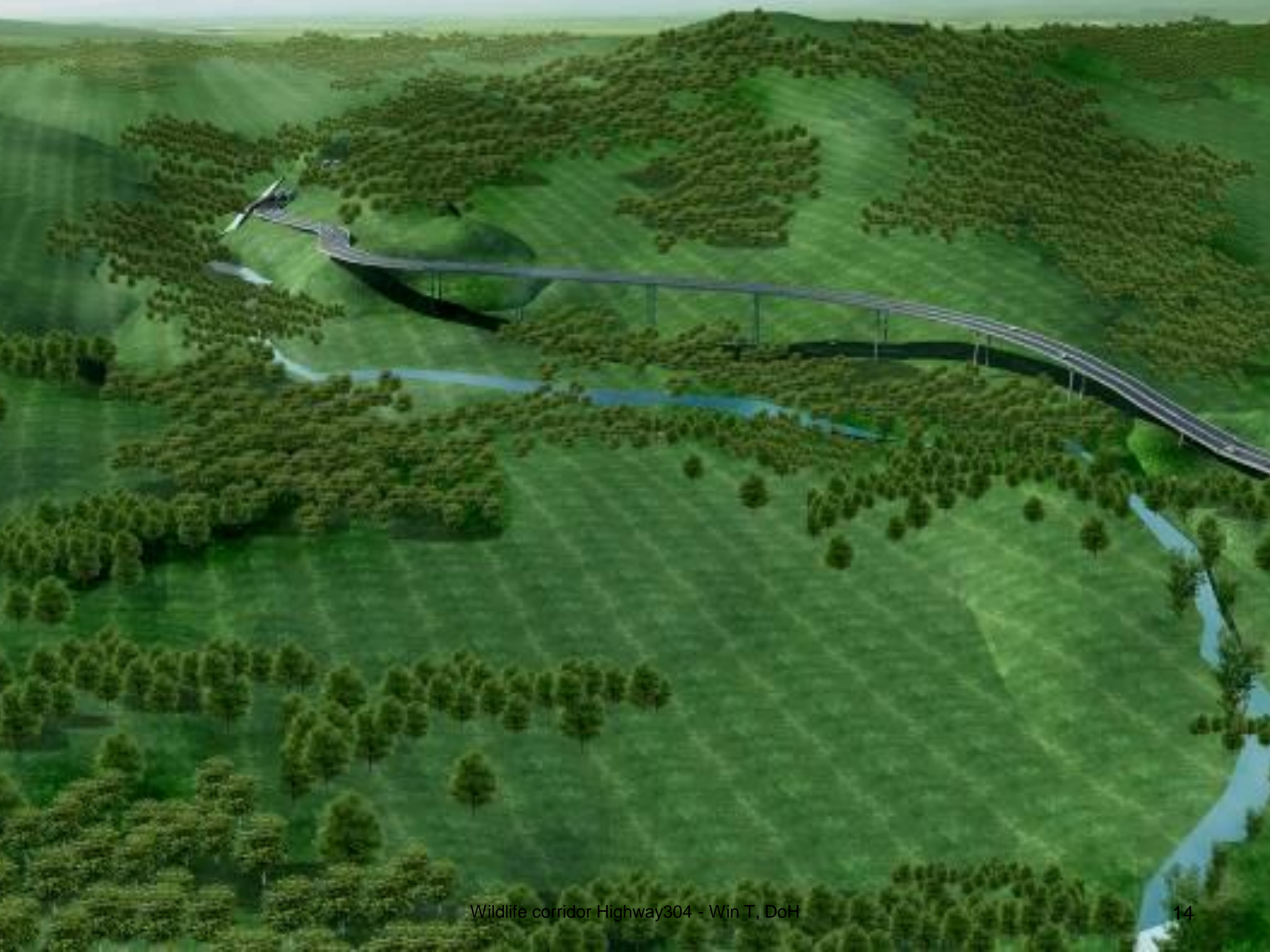
Wildlife corridor for km.26-29



- สัญลักษณ์**
- กระต๊อง (*Bos gaurus*)
 - เลียงผา (*Naemorhedus sumatraensis*)
 - กวางป่า (*Rusa unicolor*)
 - เก้ง (*Muntiacus muntjak*)
 - หมี (*Ursus sp.*)



Wildlife corridor Highway304 - Win T, DoH



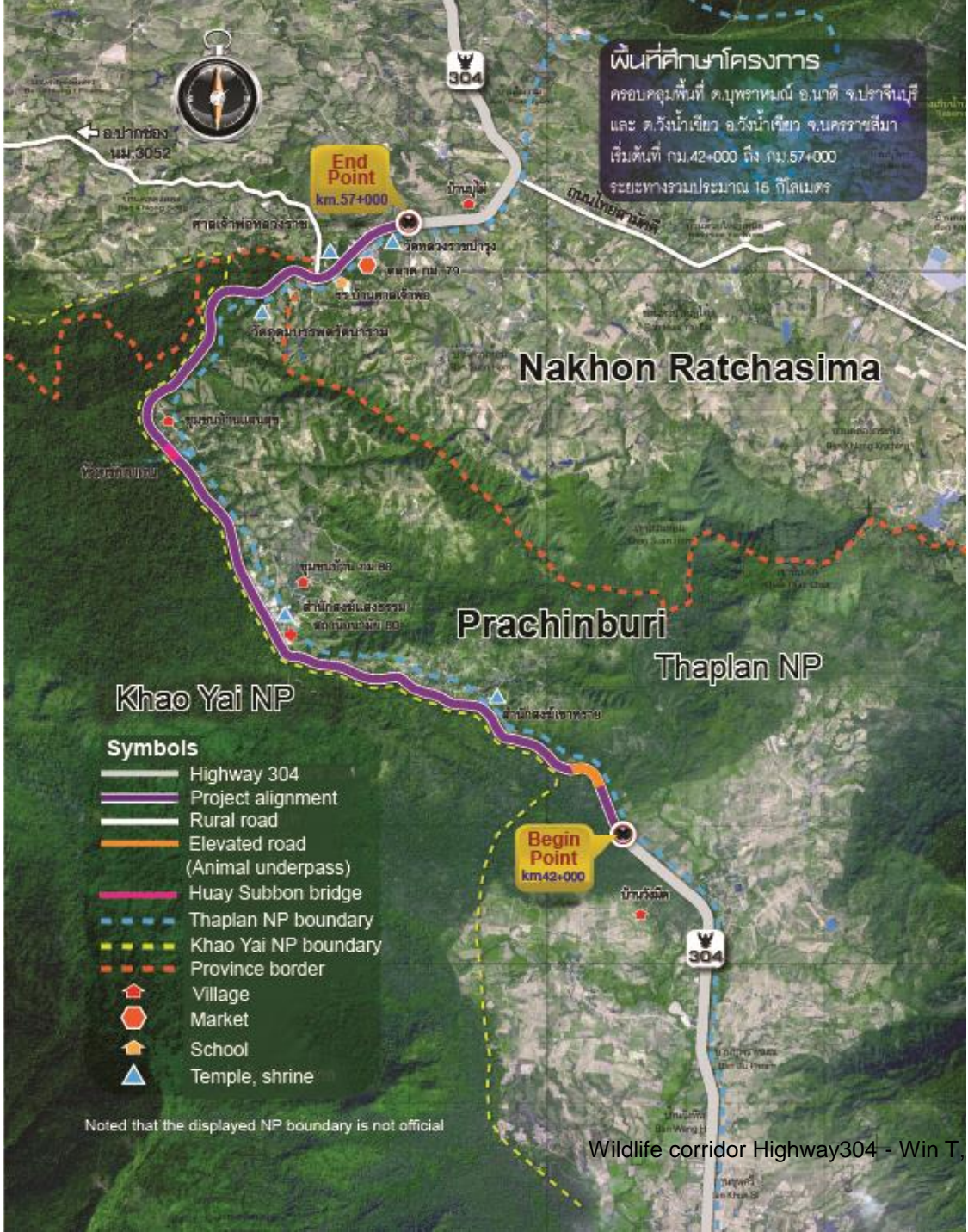






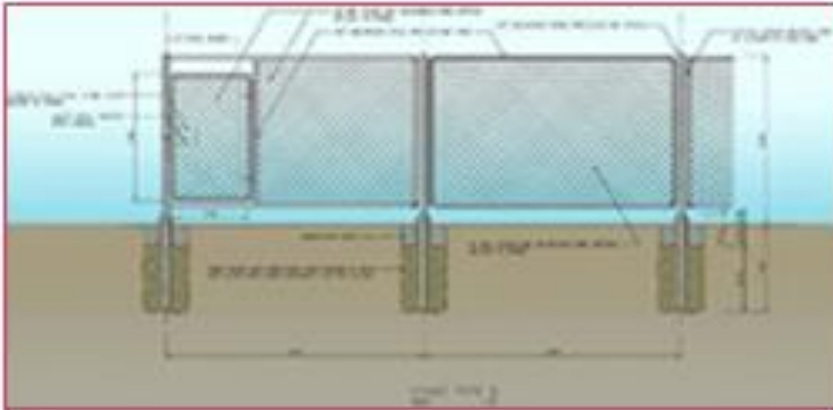
Wildlife corridor Highway304 - Win T. DoH

Wildlife corridor and road widening for km.42-57



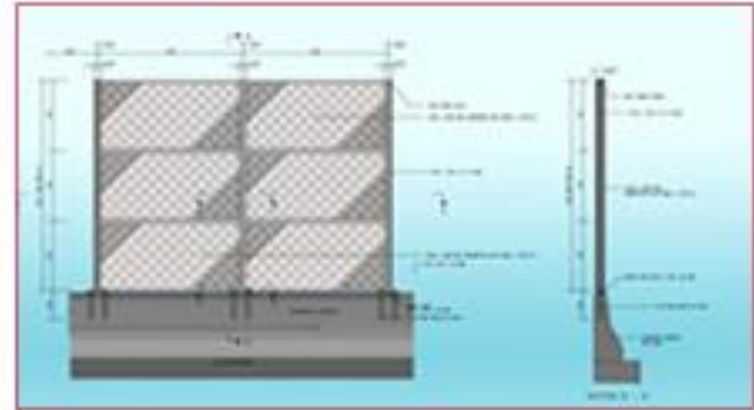
Wildlife corridor design at km.42+600 – km.42+950

Note: observed animals from the study that are expected to use the wildlife corridor are wild boar, muntjac, Asian black bear, Indo-Chinese water dragon, frog, and puddle frog



**Animal fences around
bridge approach at both ends**

km. 41+800 – 42+600 and km. 42+930 – 43+600



**Noise barriers alongside
elevated highway**

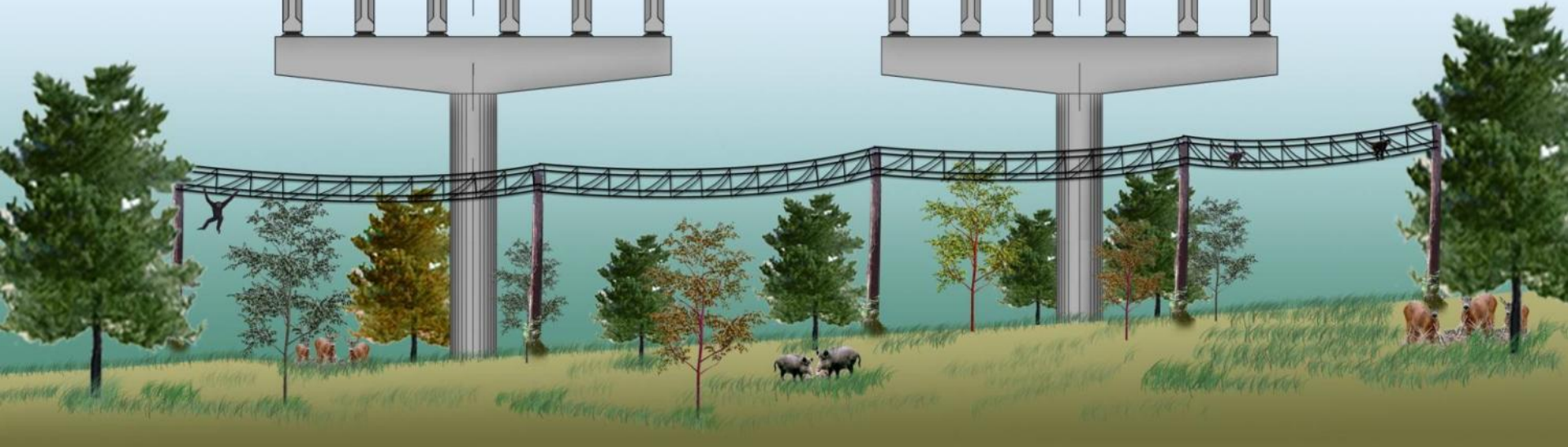
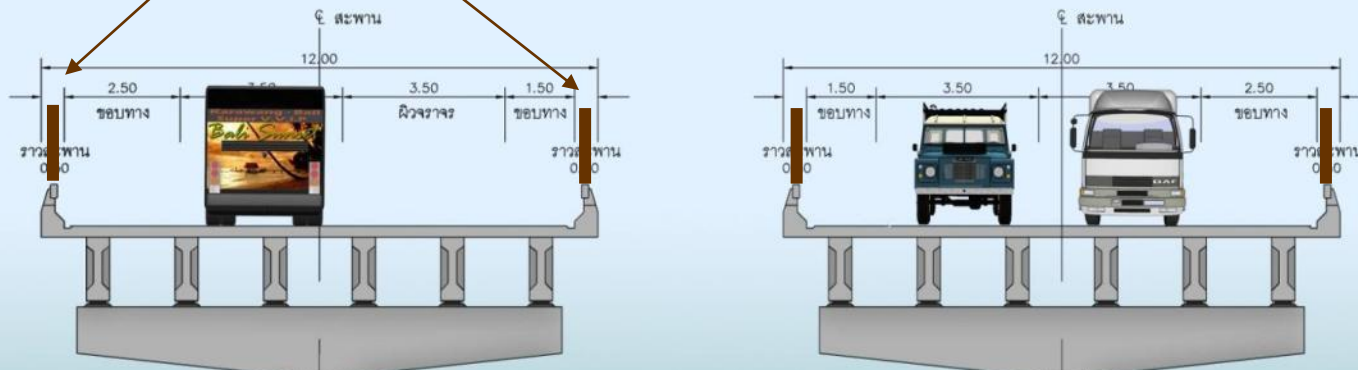
km.42+600 – 42+950

Bridge length 330 m.

Clearance 7-9 m.

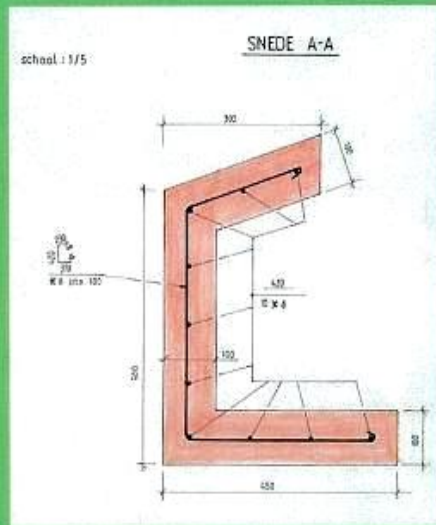
Wildlife corridor design at km.42+600 – km.42+950

Noise barrier



Amphibian tunnel

ร้วกันสัตว์สะเทินน้ำสะเทินบก



Small mammal underpass



Wildlife corridor Highway304 - Win T, DoH

Fencing

- Fence along at-grade portion of the road
- Fence extending from both ends of road (wildlife corridor portion) along the edge the forest area



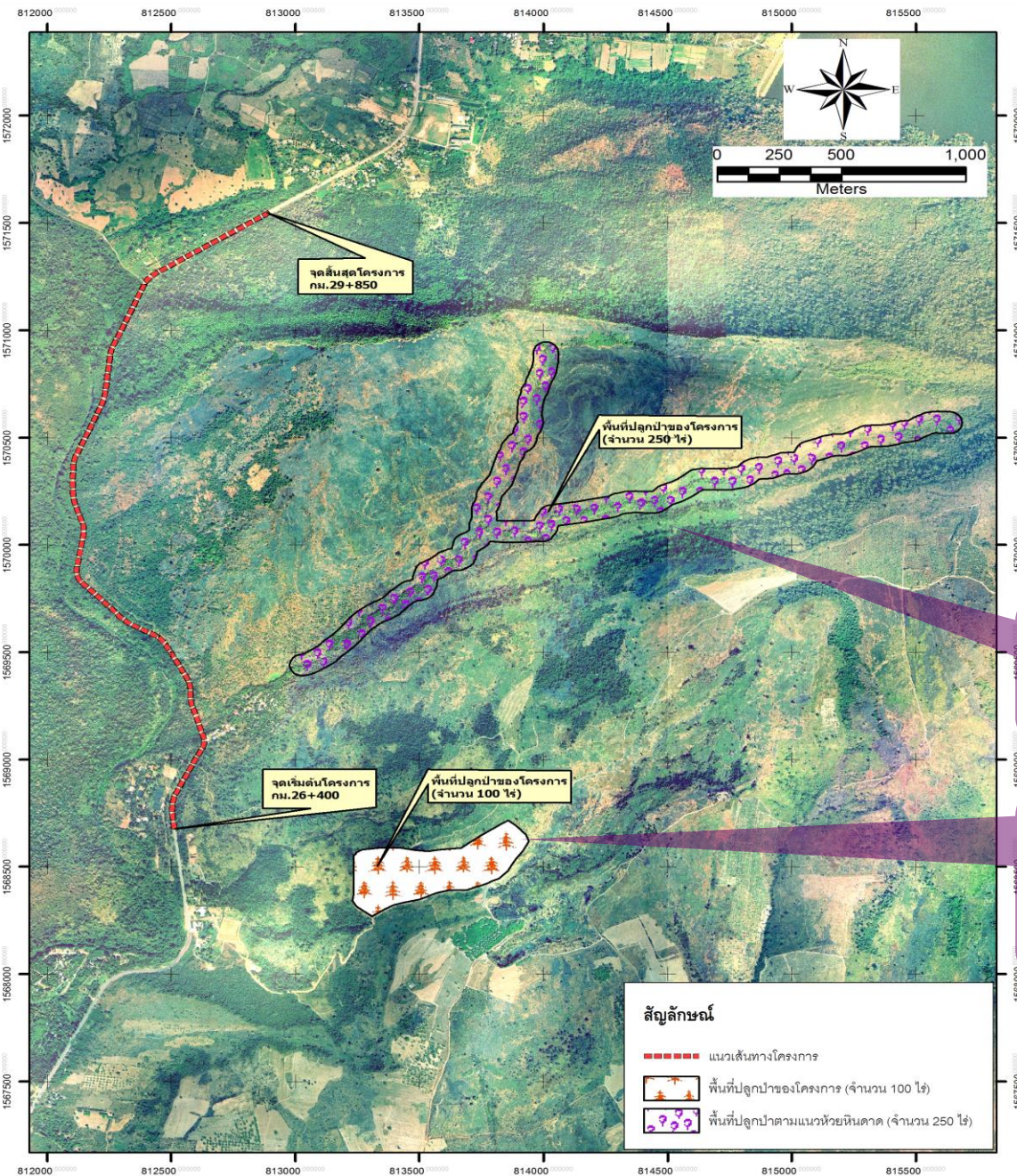
Reforestation

Enhance forest ecology and supplement animal food source

250 rai along a creek

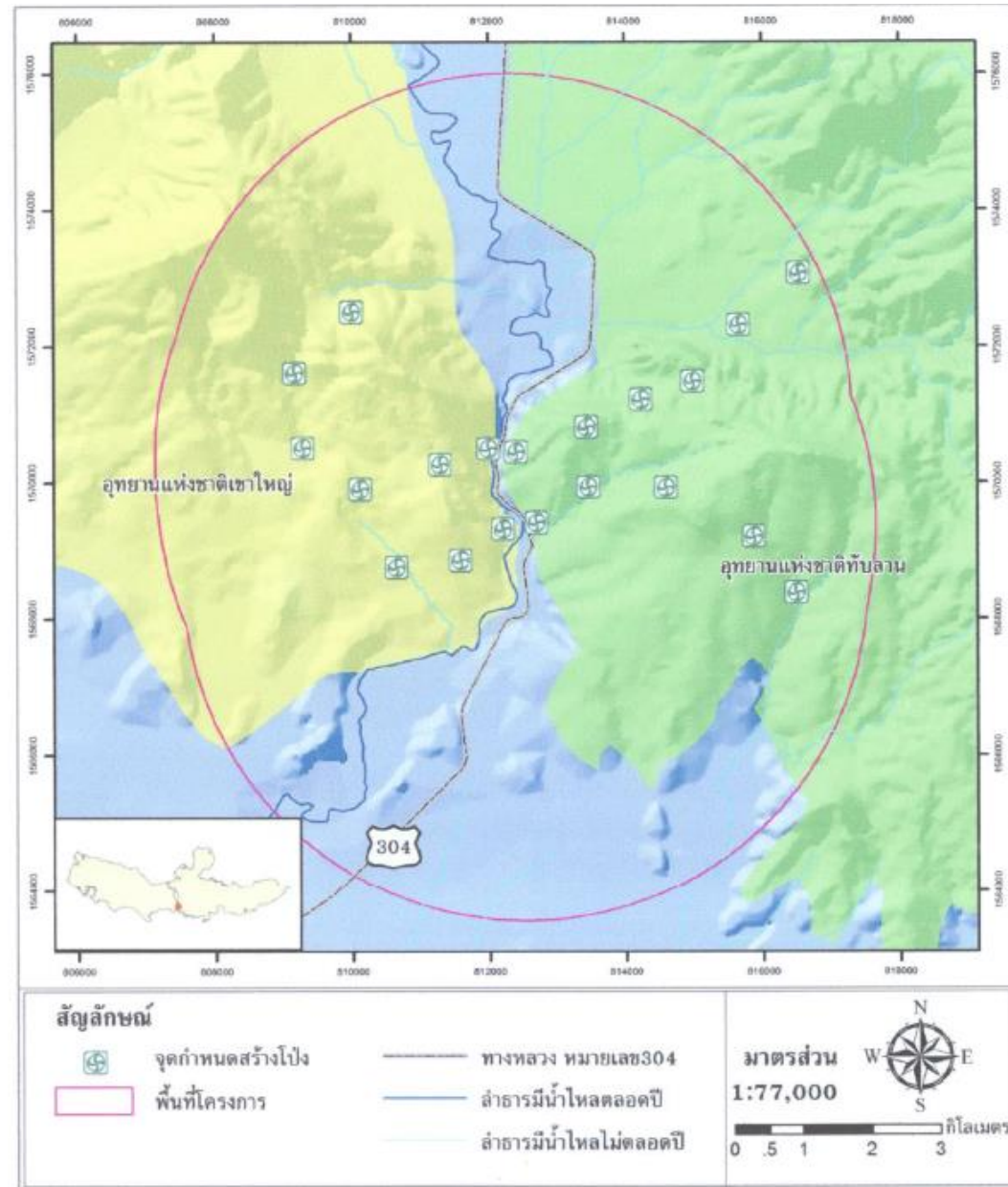
100 rai in degraded forest area

Note: 1 rai = 1,600 sq.m.



Habitat enhancement

- Create salt licks
- Build check dams
- Growing animal food source plants under/over crossing structure



Wildlife crossing monitoring

- CCTV and camera trap
- Sand trap
- Park ranger unit
- Wildfire lookout tower



Road impact mitigation

- Prevent poaching during construction
- Apply technique to reduce noise from blasting

- Noise barriers
- Lighting design

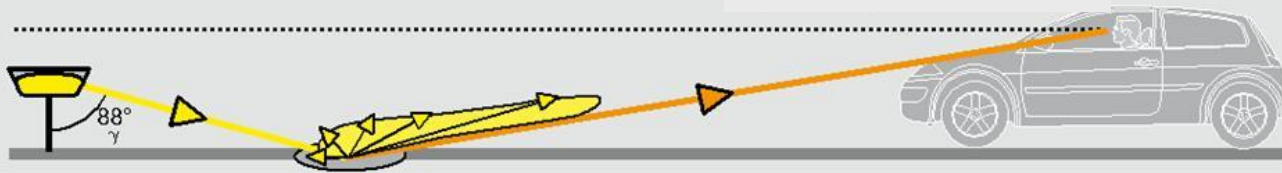
Lighting design on elevated road



Specifically-designed luminaire lessens light pollution to surrounding forest

Fl

แนวแสงสะท้อน



Project status

- Both EIAs were approved by National Environment Board (NEB) in July 2014
- Collaboration among DOH, Dept. of National Parks and Wildlife Conservation and Royal Forest Dept via Joint Steering Committee and Working Group throughout construction phase
- Construction scheduled to complete by 2019
- Environmental monitoring conducted throughout construction phase
- Ongoing monitoring is planned for the operation phase

Project status

Wildlife overpass: tunnel covering step





Thank you



**Information supported by
Department of Highway,
Ministry of Transport, Thailand**

