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The Augustan aqueduct of Serino in the context of road system and urbanization of the served territory in Southern Italy

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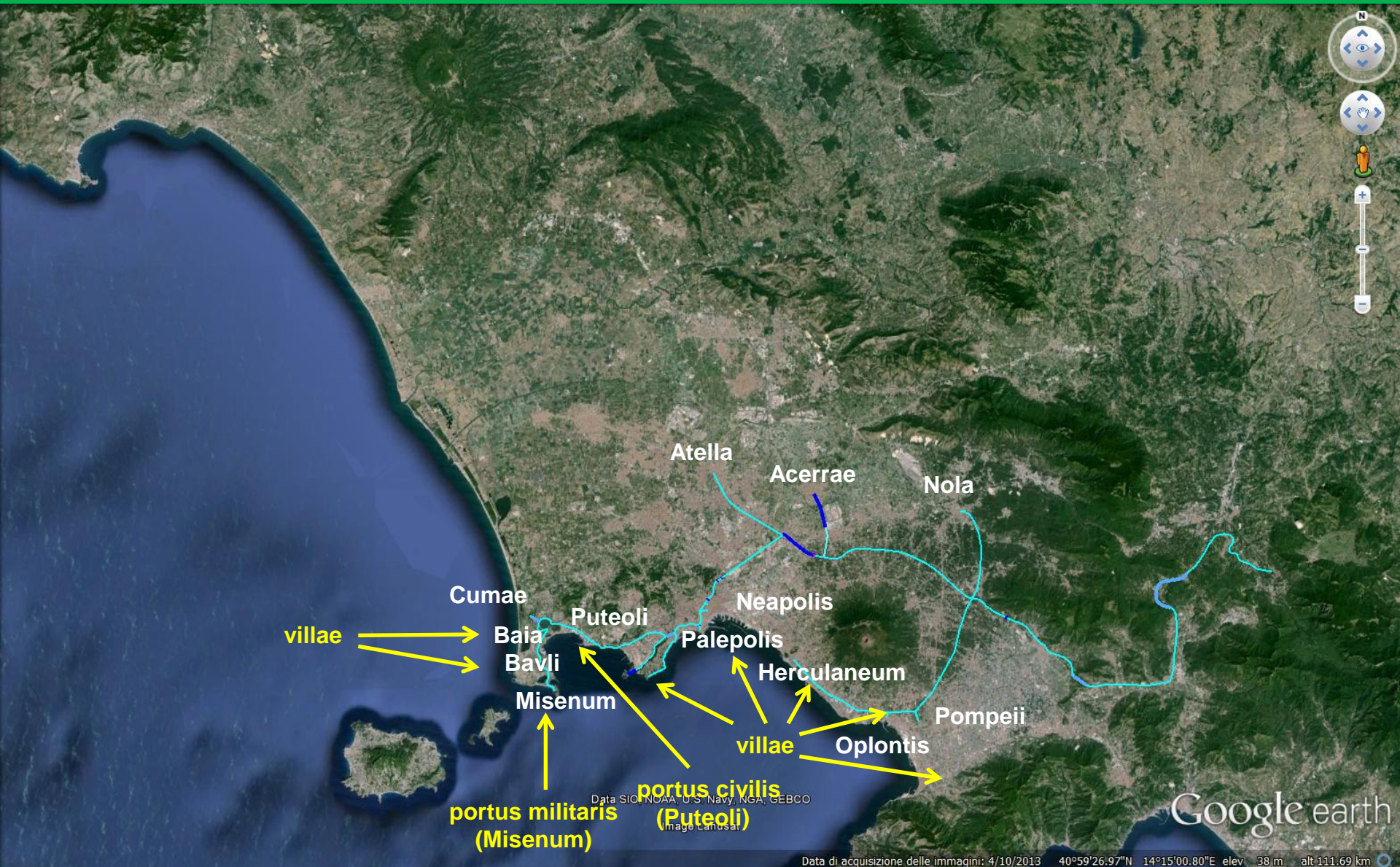


Emperor
Gaius Julius Caesar Octavianus
Divi Filius Augustus



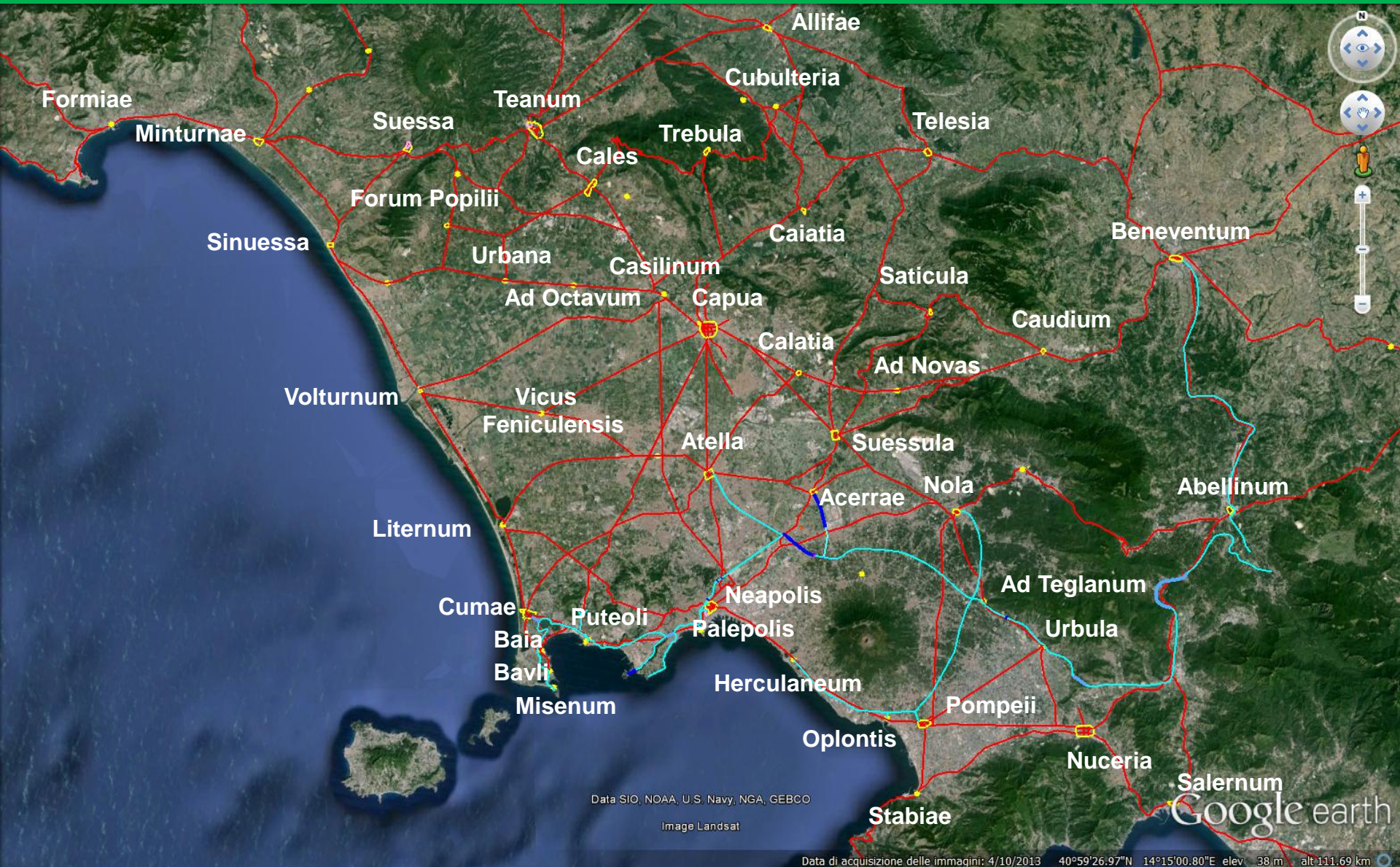
Marcus Vipsanius Agrippa,
brotherly fellow of Augustus,
pivotal pillar of Augustus success and power,
and builder of the Augustan aqueduct

The Augustan aqueduct of Serino (*Aqua Augusta*) was exceptional in size (the main trunk about 103 km long, the branches about 60 km). It served 13 towns, the civil port of *Puteoli* (one of the two most important civil ports of the Empire, the other was *Alexandria* in *Aegyptus*), the military port of *Misenum* (one of the two most important military ports of the Empire, the other was *Ravenna*), and many villas of eminent figures.



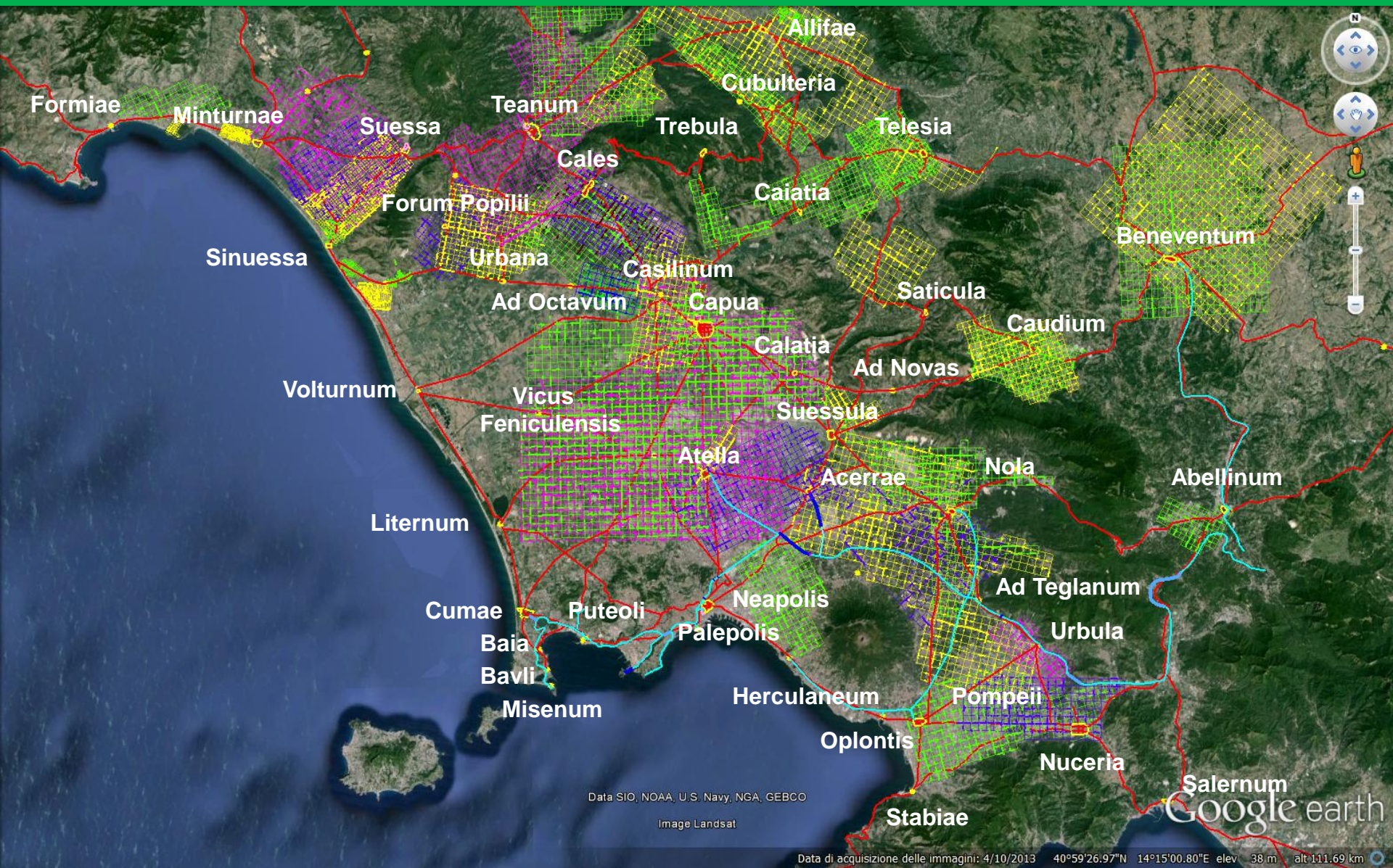
Here, the Augustan aqueduct is examined in the rich context of the cities and roads existing in the Roman age in the crossed area.

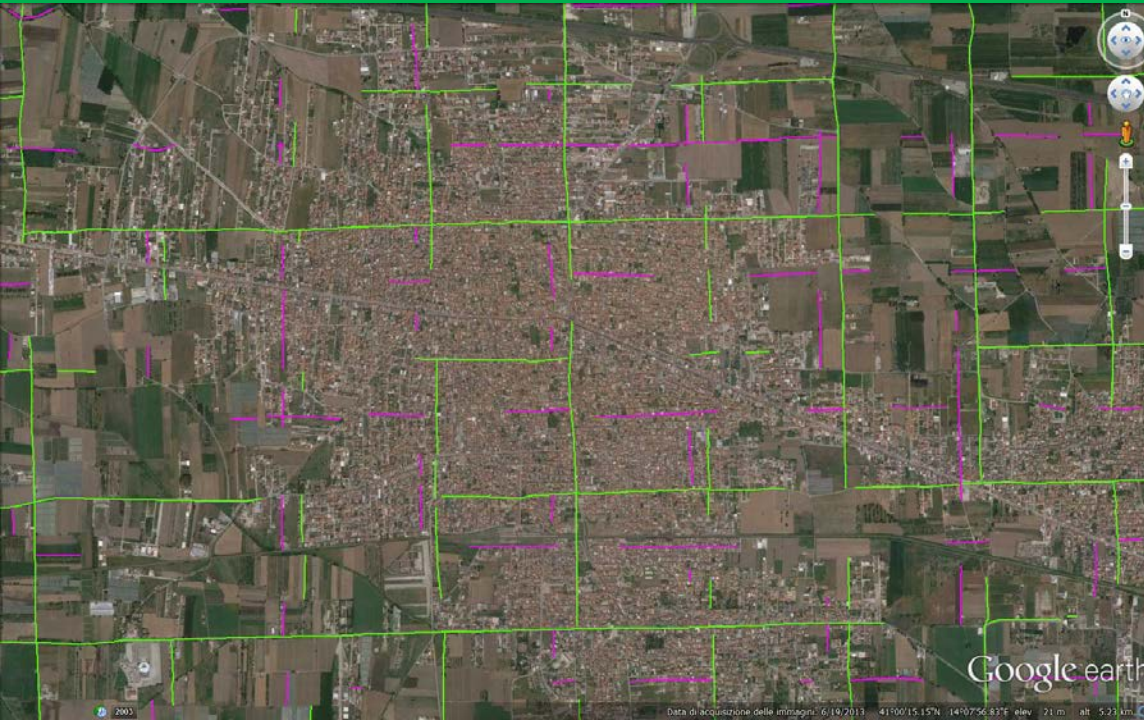
In Roman times (like today), the area was very fertile and densely populated. Many ancient centers are still in existence and many ancient roads coincide with the modern road layouts.



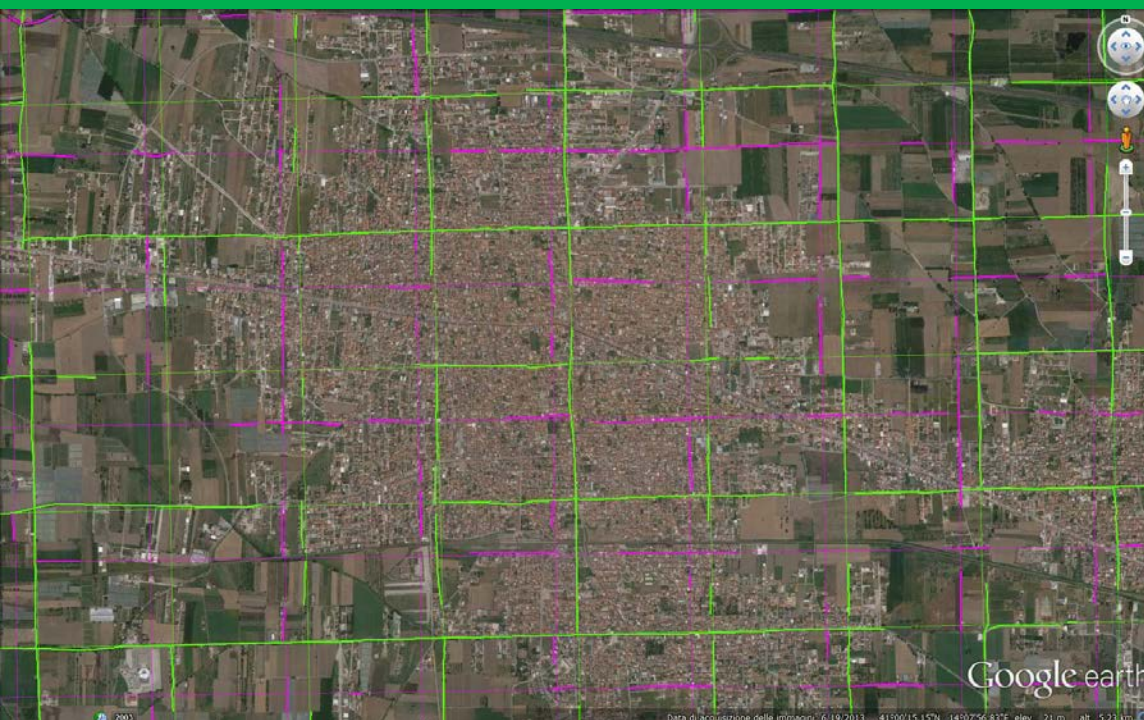
The centuriations existing in the same area were also considered.

As it was (and is) a very fertile area, it was subdivided (“centuriated”) more times, creating a network of country roads (*limites*) whose paths are quite often still preserved, allowing the reconstruction of the grids of *limites* which are two millennia old!





The centuriations (*centuriationes*), in their typical form, were regular subdivisions of a territory by a network of unpaved country roads (*limites*), which defined a series of square areas, called *centuriae*, in general assigned to war veterans.



The presence of modern road layouts or borders, placed at regular intervals and with uniform orientations, allows the reconstruction of the original grid of a centuriation.

EXAMPLE 1

Upper figure: Persistences related to two centuriations in the same area (*Ager Campanus I*, Gracchian age, **purple color**, and *Ager Campanus II*, Sullan and Caesarean age, **green color**).

Lower figure: the two reconstructed grids.

EXAMPLE 2

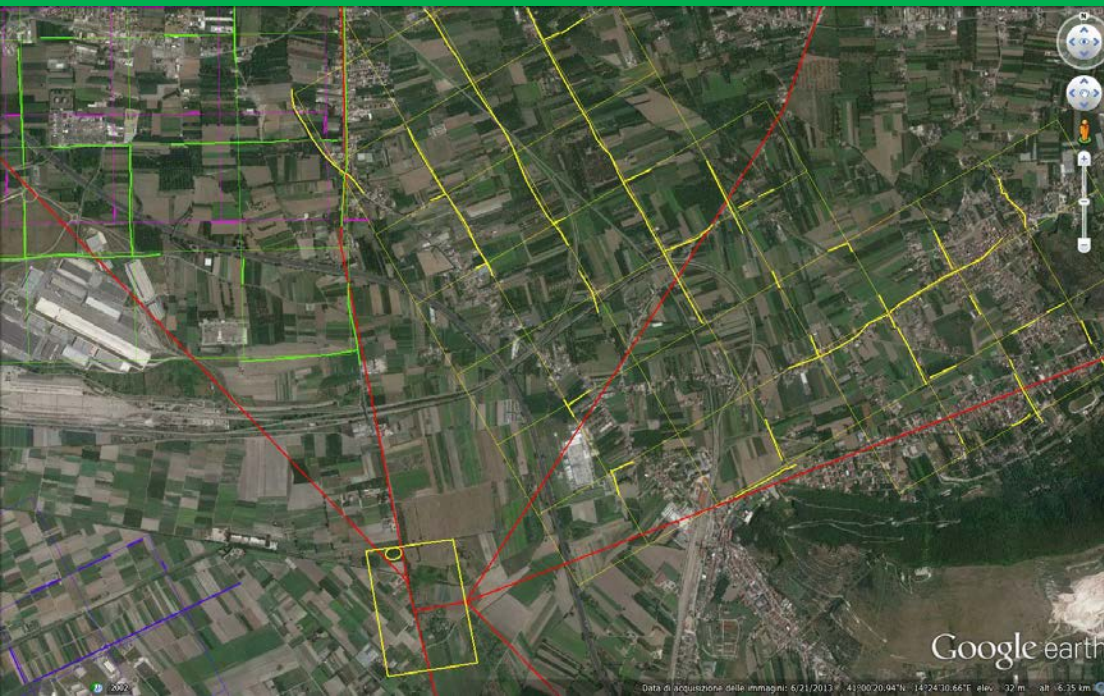
Upper figure:

The area to the north of the ancient city of *Suessula*, where only few sparse ruins are found



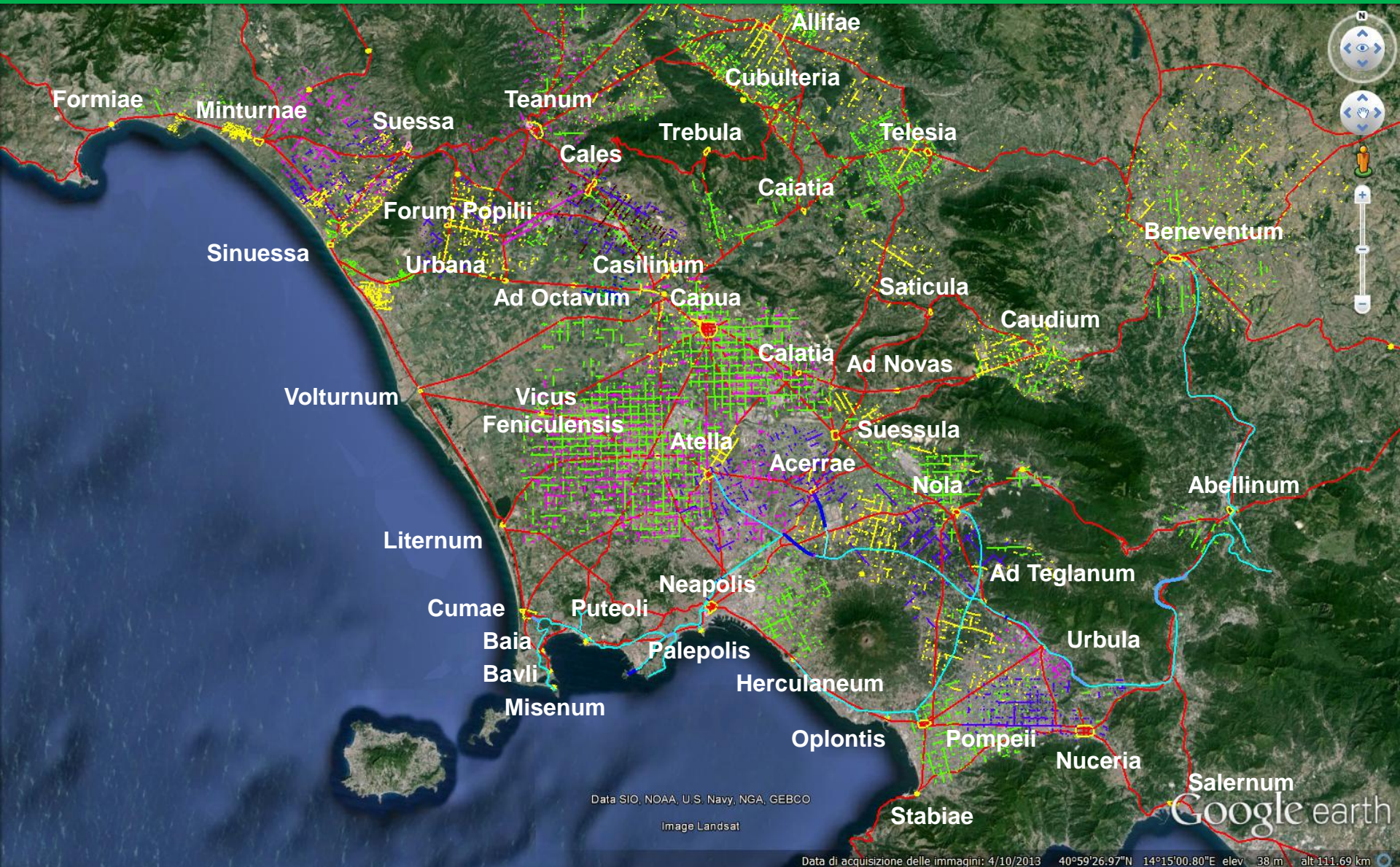
Lower figure:

Parts of the reconstructed grids of four centuriations (*Suessula* [yellow], *Ager Campanus I* [purple], *Ager Campanus II* [green], *Acerrae-Atella I* [violet]), the roads of the area [red], walls and amphiteater of *Suessula* [yellow]



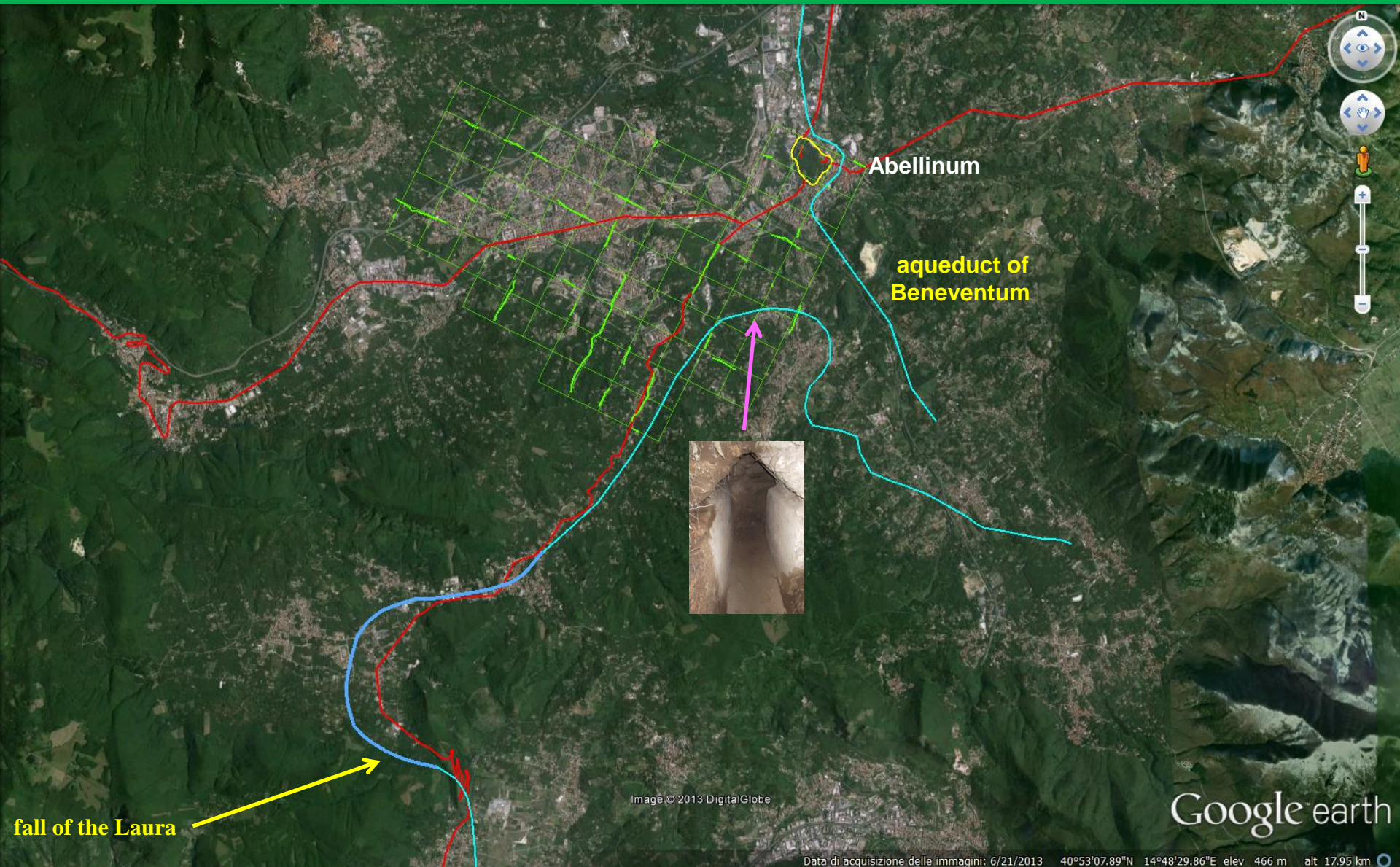
The persistences of centuriation *limites*' in the area crossed by the aqueduct or near it.

The grids inferred from them have *limites* in all thousands of kilometers long!



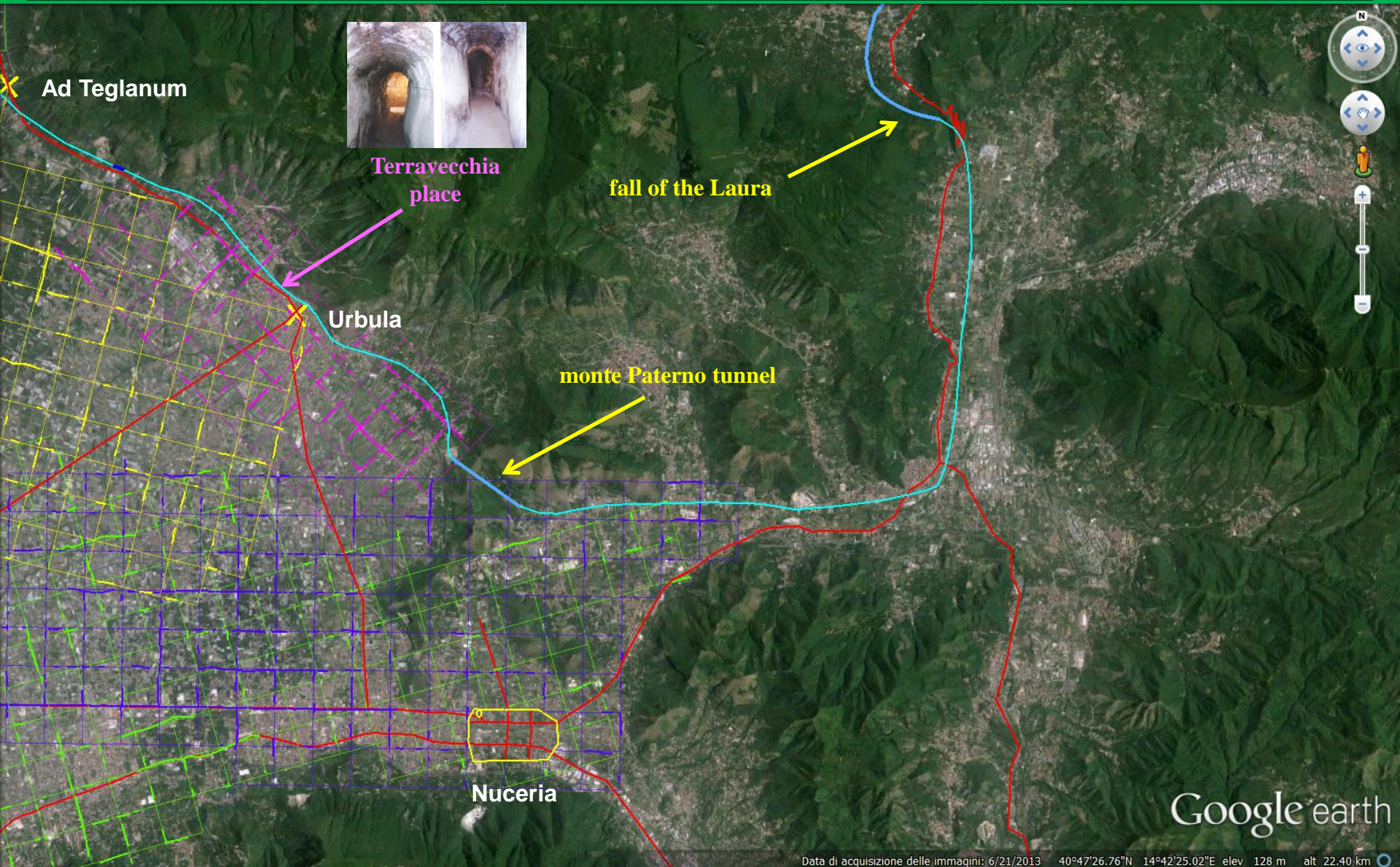
Short description of the Augustan aqueduct and of the surrounding areas

First segment - From the source to the "caduta della Laura" (fall of the Laura, included) (371 -> 205 m above sea level ("asl"); 18 km)



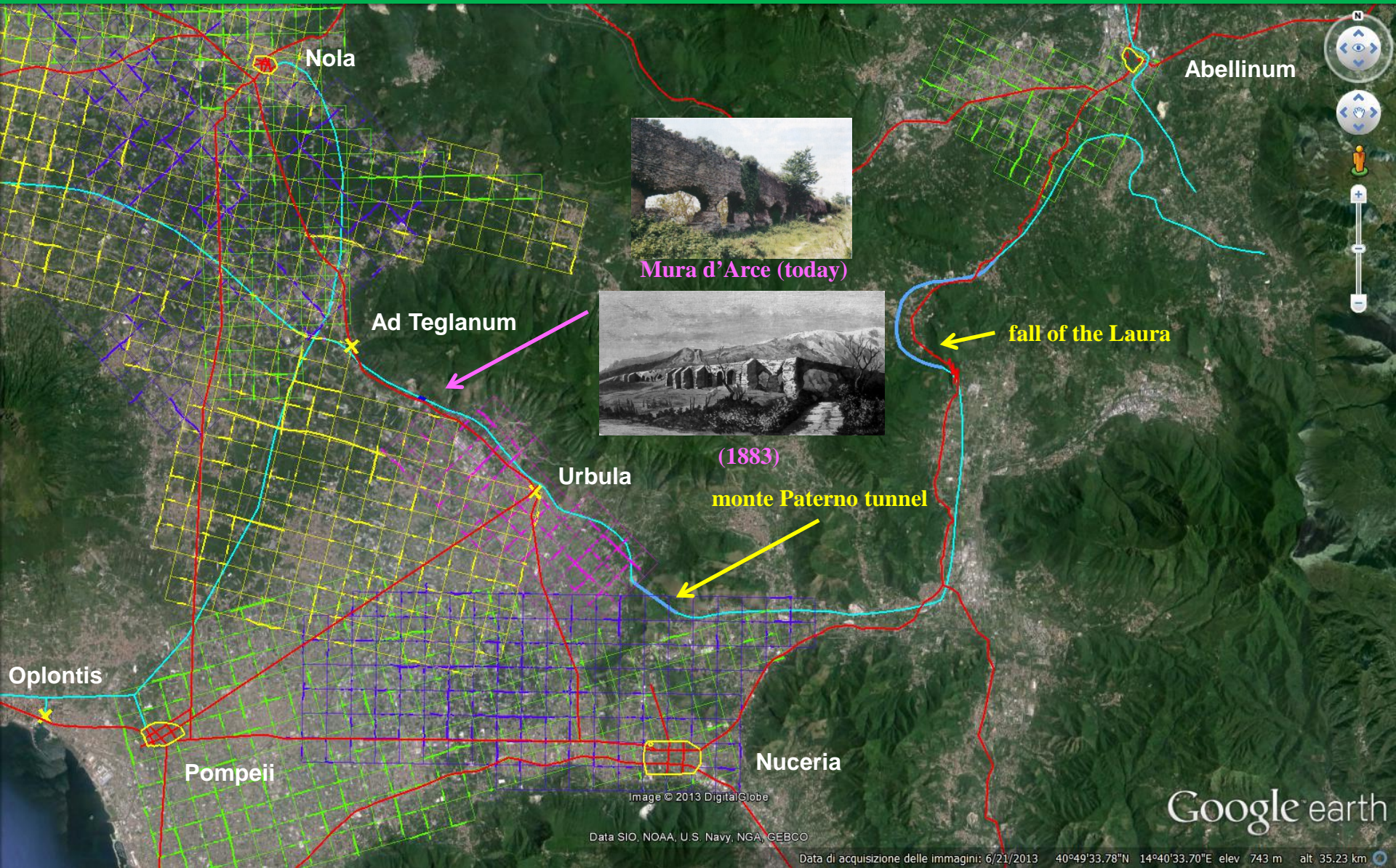
Second segment – From the “caduta della Laura” (fall of the Laura, excluded) to monte Paterno tunnel (included) (205 -> 70 m asl; 16.4 km)

- It passed near the town of *Nuceria Alfaterna*, the third or fourth of Campania for population (not served by the aqueduct)



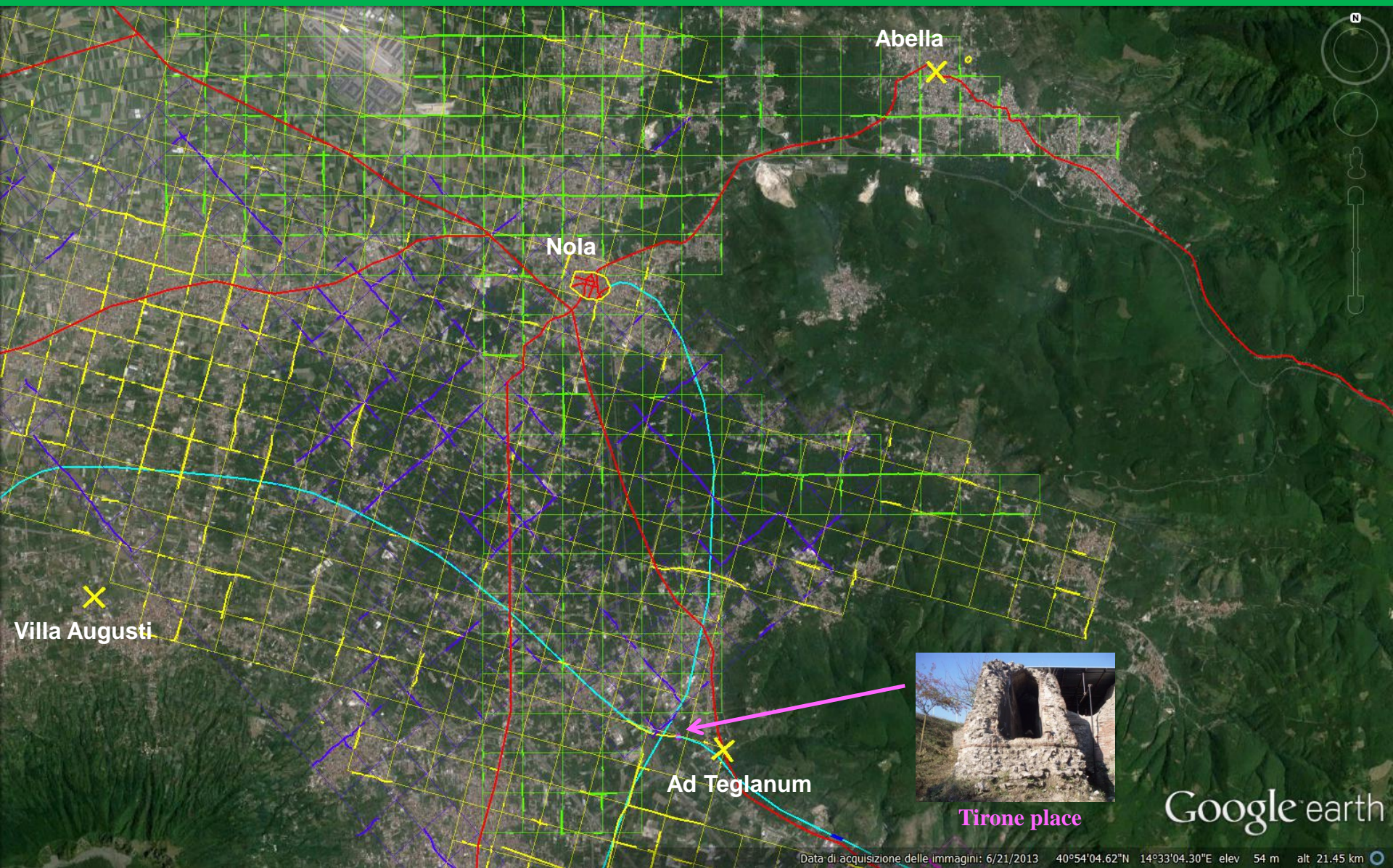
Google earth

Third segment - From Monte Paterno tunnel (excluded) to the branch points for *Nola* and *Pompeii* (70 -> 50 m asl; 13.7 km)
- Around the valley of *Sarnum* (Sarno) river, up to the watershed with *Clanium* (Regi Lagni) basin



Branch for *Nola* (6.9 km)

- The great *Vergilius* complained that he had not obtained the privilege of a private water connection for his villa in Nola



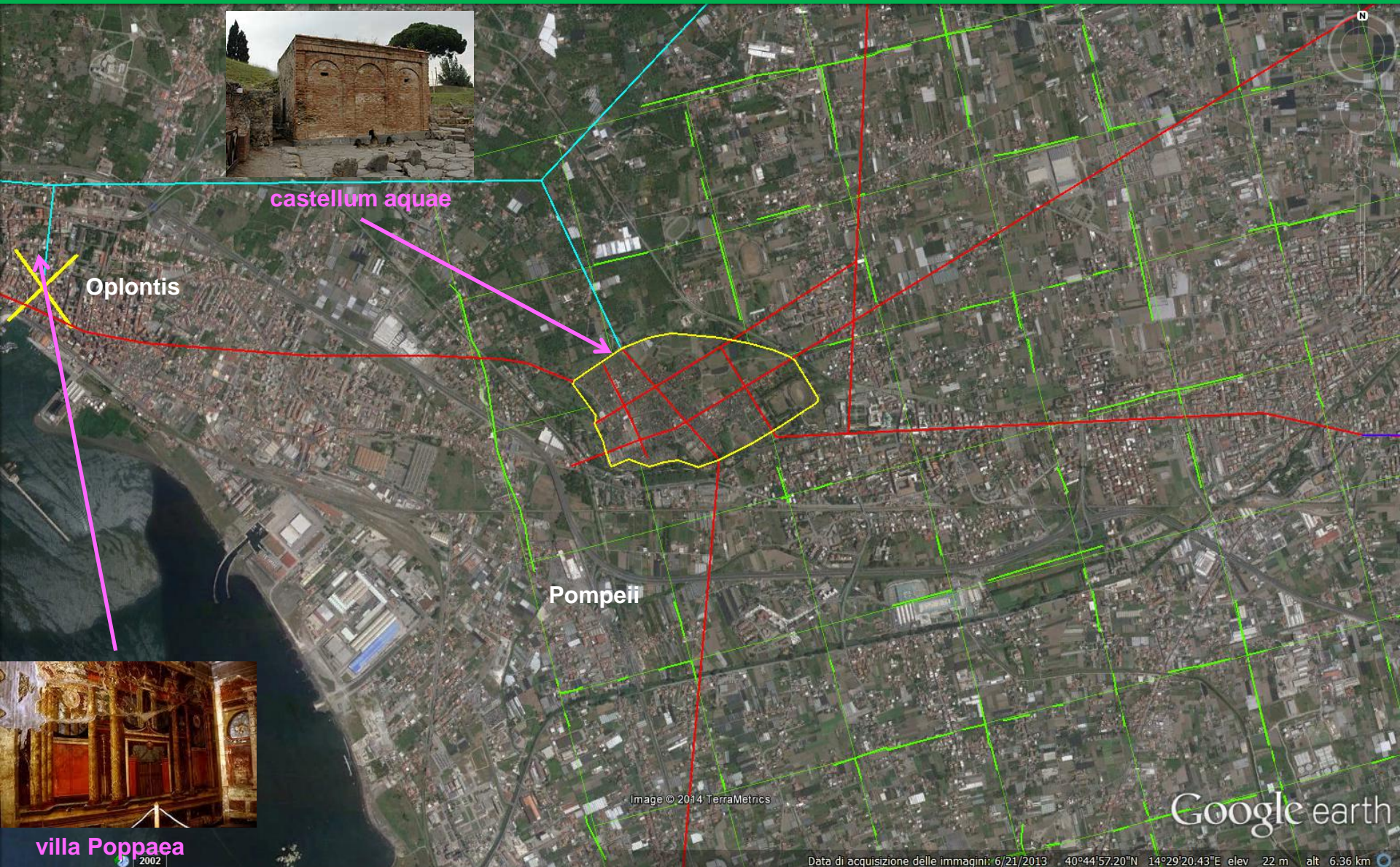
Branch for *Pompeii*, *Oplontis*, *Herculaneum* (12.4 km up to the sub-branch for *Pompeii* + 12.9 km from *Pompeii* to *Herculaneum* = 25.3 km)



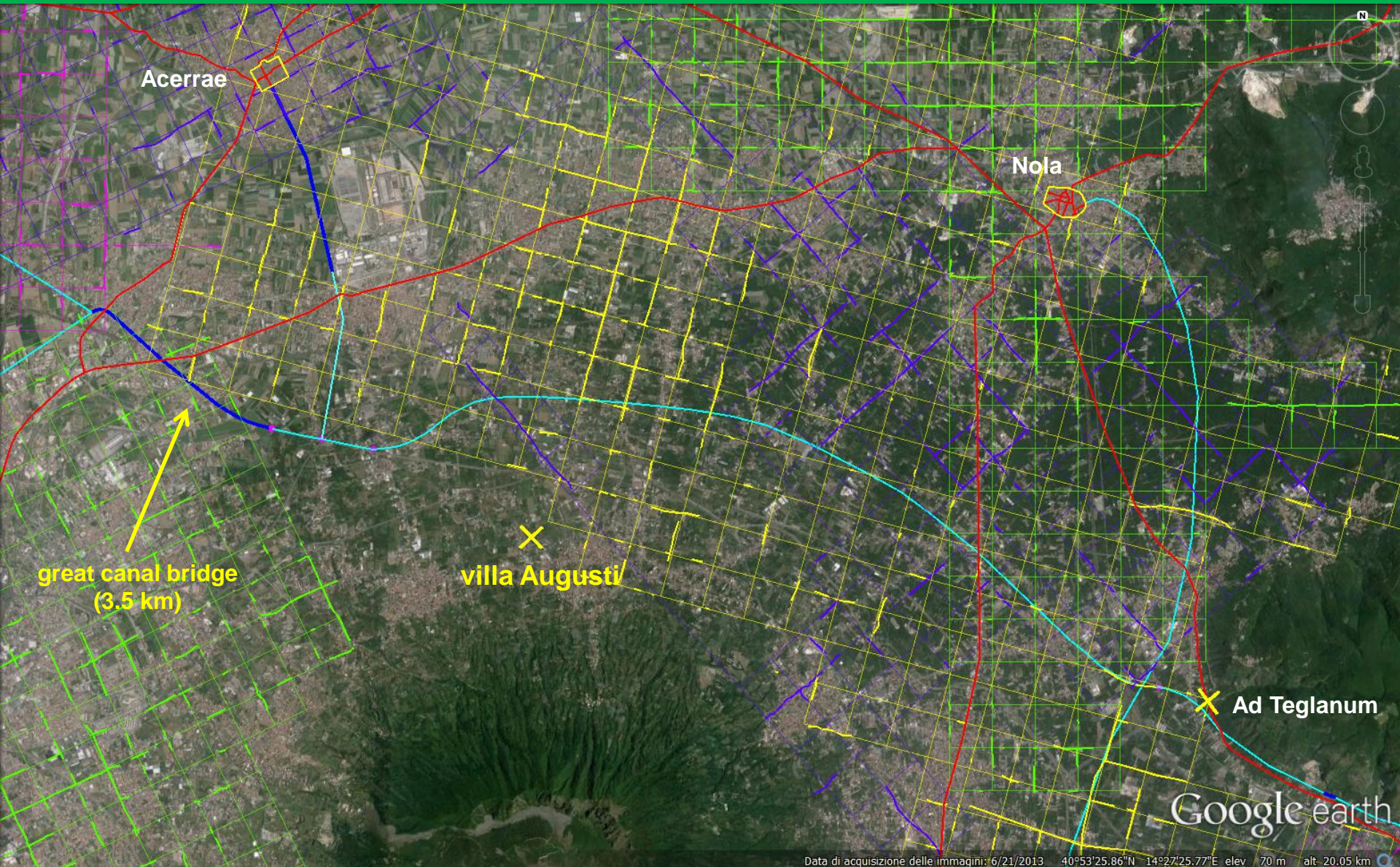
Pompeii

The grid of *Nuceria II* centuriation is all around the site of the buried city.

This demonstrates that the area was again subdivided and cultivated after the 79 AD eruption



Fourth segment - From the branch points for *Nola* and *Pompeii* to the branching point for *Acerrae* (50 -> 47 m asl; 13.8 km) + Branch for *Acerrae* (6 km).
- *Villa Augusti* “*apud Nola*”, the place chosen by *Augustus* for his last days



Villa Augusti in its context:

- surrounded by “client” towns and by centuriations assigned to Augustus’ war veterans;
- encircled by the Augustan aqueduct with a view on the great canal bridge

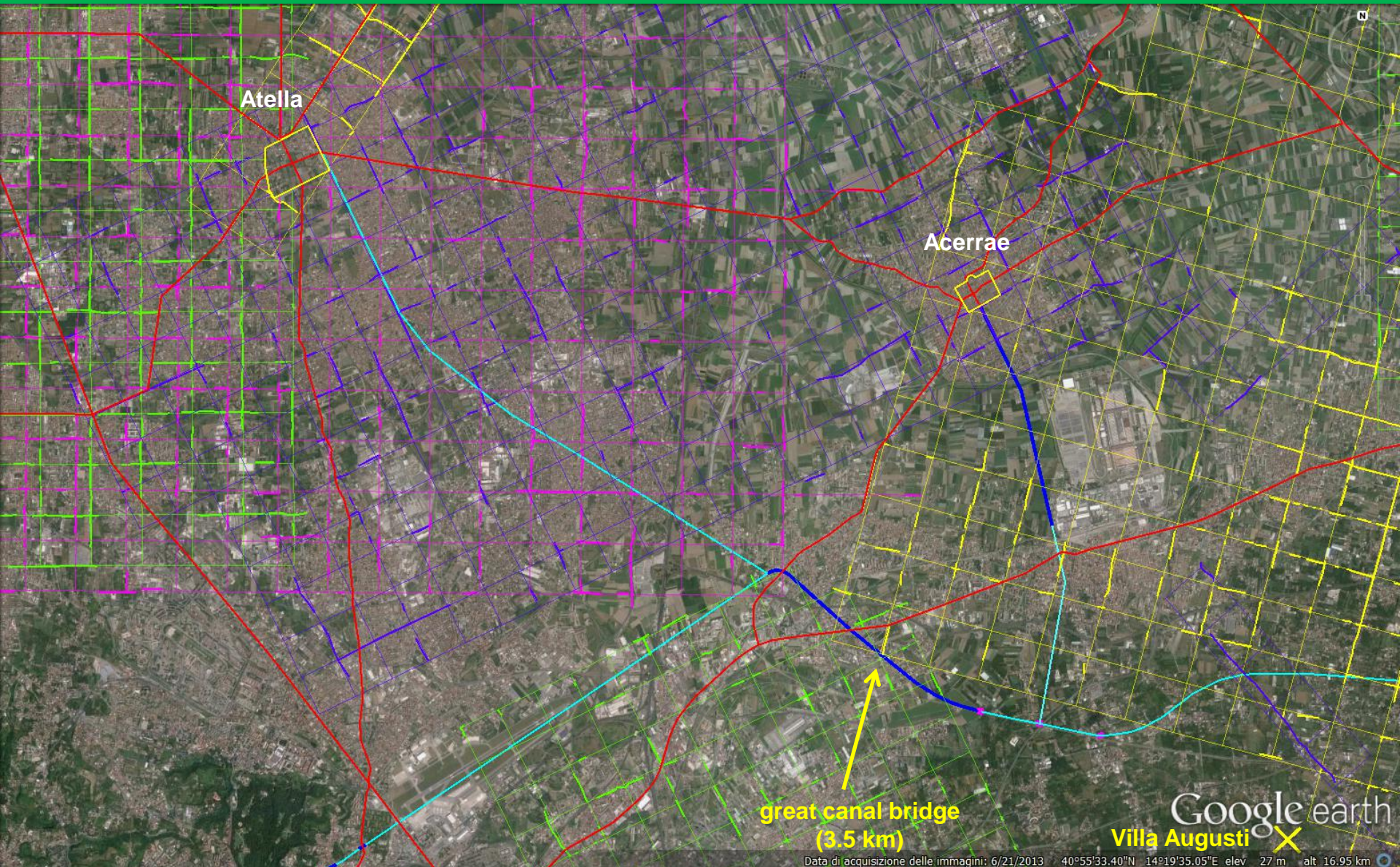


Monumental entrance of *Augustus'* villa

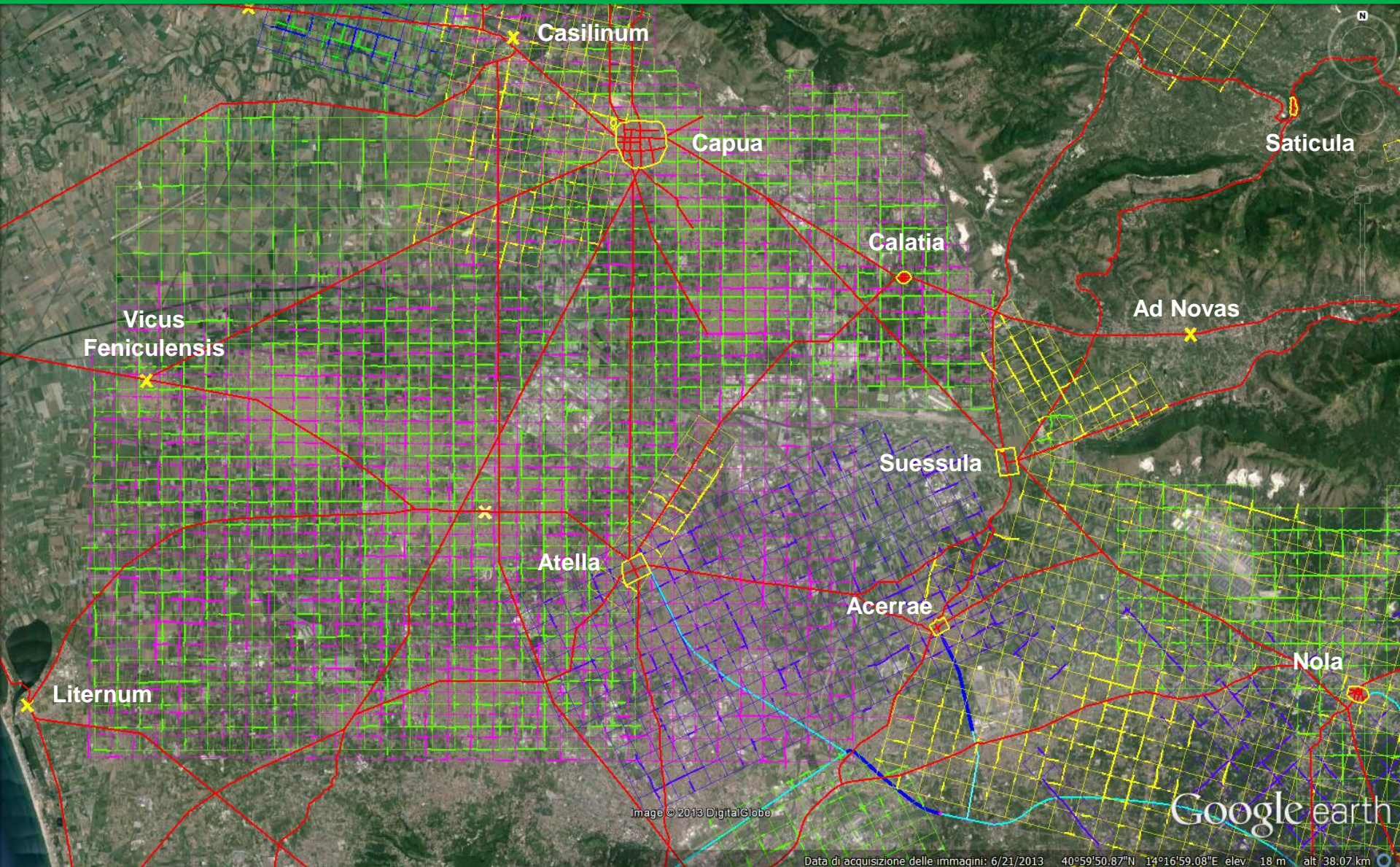


Fifth segment - From the branch for *Acerrae* to the branching point for *Atella* (47 -> 44 m asl; 4.5 km)

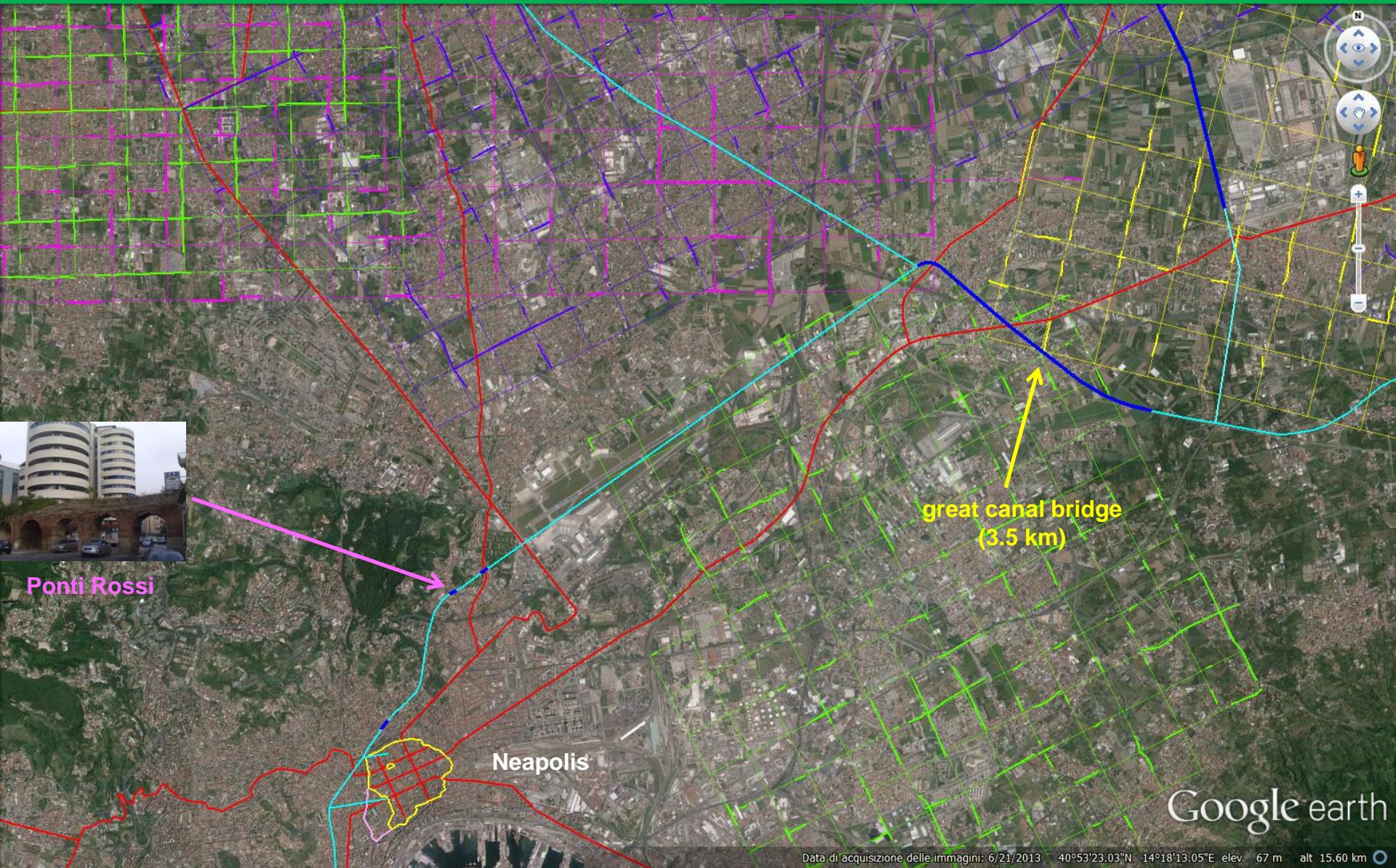
Branch for *Atella* (8.8 km), famous for its *fabulae atellanae* (theater comedies)



A general view of the area of *Capua*, *Atella*, *Acerrae*, *Suessula*, *Calatia*, the core of *Campania felix*



**Sixth segment - From the branch point for *Atella* to the “Ponti Rossi” (“red bridges”, included)
(44 -> 41 m asl; 7.4 km)**



Seventh segment - From the Ponti Rossi (excluded) to the tunnel for "Fuorigrotta" (included)
(41 - > 40 m asl; 8 km)

First branch for *Neapolis* (0.05 km up to the walls); Second branch for *Neapolis* (0.7 km);
Branch for *Palepolis* (*Partenope*) (0.5 km)



Branch for *Pausylipon* (the famous villa of *Vedius Pollio*, bequeathed to *Augustus*, 5.5 km)
Branch for *Nisida* (5.2 km). On this small island there were the villas of *Lucius Licinius Lucullus*, famous for his “*lucullian*” dinners and of *Marcus Iunius Brutus*, one of the main Caesar’s murderers



Eighth segment - From the tunnel for “Fuorigrotta” (excluded) to *Puteoli* (40 -> 38 m asl; 7.8 km)
- *Puteoli* had a very important civil harbour, was the second town of *Campania* for population, and had the third greater amphitheatre (after *Roma* and *Capua*) in all the Roman empire



Ninth segment - From *Puteoli* to the branching point for *Cumae* (38 -> 36 m asl; 5.5 km)

- *Cumae* was heavily fortified and there was even a large military tunnel (*Cocceius* tunnel, nearly a kilometer in length) which connected it with the lake of *Avernus*, used for a certain time as military harbour



Tenth segment - From the branching point for *Cumae* to the *cisterna* Dragonara (36 -> 0 m asl; 8.4 km)



Cumae



piscina mirabilis



cisterna Dragonara

Greco classico	Greco antico	Greco, dialetto euboico (Cuma)	Latino arcaico	Latino classico	Alfabeto latino moderno
A, α (alfa)	Α	Α	A	A	A, a
B, β (beta)	Β	Β	B	B	B, b
Γ, γ (gamma)	Γ	Γ < < <	C	C	C, c
Δ, δ (delta)	Δ	Δ	D	D	D, d
E, ε (epsilon)	Ε	Ε	E	E	E, e
F, Ϝ (digamma)	Ϝ	Ϝ F	F	F	F, f
				G	G, g
Z, ζ (zeta)	Ζ	Ζ			
H, η (eta) [e lunga], poi [i]	Η	Η [h]	H	H	H, h
Θ, θ (theta)	Θ	Θ			
I, ι (iota)	Ι	Ι	I	I	I, i
					J, j
K, κ (kappa)	Κ	Κ	K	K	K, k
Λ, λ (lambda)	Λ	Λ	L	L	L, l
M, μ (mi)	Μ	Μ	M	M	M, m
N, ν (ni)	Ν	Ν	N	N	N, n
Ξ, ξ (xi) [x]	Ξ	Ξ			
O, ο (omicron)	Ο	Ο	O	O	O, o
Π, π (pi)	Π	Π	P	P	P, p
Q ϙ (qoppa)	ϙ	ϙ	Q	Q	Q, q
P, ϱ (rho)	Ρ	Ρ	R	R	R, r
Σ, Ϻ, σ (sigma)	Σ	Σ	S	S	S, s
T, τ (tau)	Τ	Τ	T	T	T, t
Y, υ (iupsilon)	Υ	Υ V	V	V	U, u
					V, v
					W, w
Φ, φ (phi)	Φ	Φ			
X, χ (chi) [h aspirata]	Χ	Χ [x]	Χ	X	X, x
Ψ, ψ (psi)	Ψ	Ψ			
Ω, ω (omega)	Ω	Ω			
				Y	Y, y
				Z	Z, z

Cumae, Greek center founded in the 8th century BC, was a very important city and played a key role in the origins of Western civilization.

Cumae founded **Dicearchia (Puteoli)**, **Partenope (Paleopolis)**, **Neapolis**, and many other centers.

Cumae defeated the Etruscans of **Capua** in 524 BC, then - allied with the Latins - the Etruscans again in 504 BC, freeing **Roma** from the Etruscan domination, and finally - allied with **Syracusae** - the Etruscan fleet in 474 BC.

The Latin alphabet, the most widely used alphabet in the world, is practically the Greek alphabet as it was written and pronounced in **Cumae**: it was adopted by the Romans with some minor modifications.

Conclusion

Often, studying great structures of the ancient world, as the Augustan aqueduct, little attention is devoted to the framing of the structure in the general context of the *civitates* and the area served.

In our case, the persistent tracks of the routes of many centuriation *limites* (extended in all for thousands of kilometers!) and of ancient roads are quantitatively very noteworthy and impressive.

In this context, a service structure as the Augustan aqueduct is evident in its full meaning as a very important element in a more general and complex organization.



This brief exposition is certainly very limited in relation to the richness of the subject and it clearly indicates the need for a more detailed study. This is the potential prelude for further enrichments based on the rational integration of data of different types, not limited to the archaeological data and the classical literary sources.

Thanks for your attention!

