

The Remarkable Story of Line No. 2!



Tram di Opicina



NMRA Metro-North Division
Saturday 17th January 2026
Boyd Misstear
ETE Colonial New England Chapter

Tram di Opicina

The Trieste – Opicina tramway

Italian: Tranvia Trieste-Opicina

Slovene: openski tramvaj

Triestine*: Tram de Opicina

*Triestine (Triestino in Italian) is found in Trieste and surrounding areas. Native to Italy, Slovenia and Croatia

Where is Opicina?







Trieste - strategically important port city of some 200,000



Trieste – by night



Trieste – Very Brief History Timeline

Trieste's history is marked by a blend of Roman, Byzantine, Lombard, and Habsburg influences

Evolved from a Roman settlement to a prominent free port within the Austro-Hungarian Empire

Following World War I, became part of Italy

Later experienced periods under Allied Military Government and the Free Territory of Trieste before ultimately returning to Italian sovereignty in 1954



How did this Tram di Opicina come to be built?

In the second half of the 19th century, Opicina and the nearby major city of Trieste were all part of the Austrian Empire

The 577 km (359 mi) double track Südbahn came into existence connecting the capital Vienna with Trieste

Trieste was then the main sea access port of the Austro-Hungarian Empire and of strategic importance

The Südbahn reached Stazione Villa Opicina in 1857

This Stazione is some distance from the village

1857 - Südbahn reaches Stazione Villa Opicina

The station is located some distance from the village

The topography forces a circuitous 32km (20mi) route from Opicina Stazione to Trieste

First through train from Vienna to Trieste ran 12 July 1857

Projects were proposed to connect Opicina village



Opicina Stazione to Trieste
Rail & Tramway Routes

Notice the topography!

Initially Hybrid Rack / Adhesion Tramway

- In 1902 the Società Anonima delle Piccole Ferrovie di Trieste succeeded in opening a tramway between Piazza Oberdan in Trieste with Villa Opicina
- Originally a hybrid RACK and adhesion tramway



Initially Hybrid Rack / Adhesion Tramway

- 1902 passenger service was provided by five two-axle double-ended conventional trams supplied by Graz with UEG* equipment
- Each tram was 9.9 m long, 2.52 m wide, 3.3 m high, and with a 3.25-m wheelbase
- Unladen weight was 10 t, and the maximum speed 10 km/h.
- Drivers station windows added 1908
- Photo – Commons.Wikimedia
- * Union-Elektricitäts-Gesellschaft, a German electrical equipment manufacturer. UEG later merged with AEG (Allgemeine Elektricitäts-Gesellschaft) in 1904



Initially Hybrid Rack / Adhesion Tramway

- Trams were pushed up the rack section by one of three electric locomotives, with Strub rack-and-pinion drive, and bow collectors for current collection
- Built by SLM* in Switzerland with UEG equipment to the same design as those for the Rittnerbahn between Bozen and Oberbozen (Bolzano) South Tyrol
- The 3.69-m long cars had a wheelbase of 1.95 m and weighed 10.6 t. Maximum speed up and down the rack section was 7.5 km/h

* **Swiss Locomotive and Machine Works (SLM):** Founded in 1871 in Winterthur, Switzerland, was a railway equipment manufacturer known for producing steam and electric locomotives, especially mountain railway equipment. It went defunct in 2005



Hybrid Strub Rack

The Strub rack section was between *Piazza Scorsola* and *Vetta Scorsola*

Three rack locomotives assisted up and down in the rack section



The Strub rack system was invented by Emil Strub in 1896. It uses a **rolled flat-bottom rail with rack teeth machined into the head approximately 100 mm apart**. – Wikimedia Commons

Hybrid Funicular / Adhesion Tramway

- Due to increasing traffic, reports indicate the rack became increasingly difficult to operate and was dismantled in 1927
- In 1928 the rack section between Piazza Scorcola and Vetta Scorcola was replaced by a funicular
- Began operating on 26 April 1928

ears? Here is our tram tour from T...



Scroll for details



First generation cable tractor (Shield Car)



6 kph to 10
kph Almost
Doubles the
Speed!



Hybrid Funicular / Adhesion Tramway

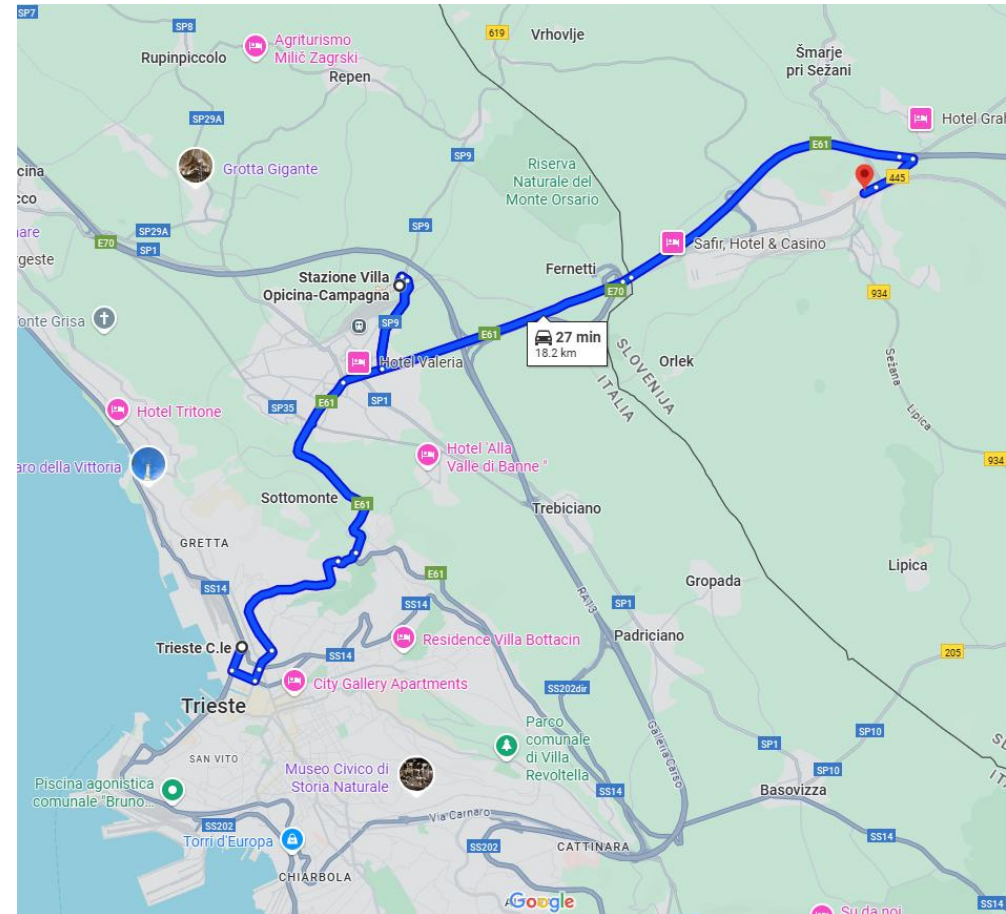
- Shield Cars attached to the cable, pushed (or held) the electric tram car
- The original 4-wheel trams continued in operation until 1935
- Replaced by larger bogie cars



Third generation (?) cable tractor

Hybrid Funicular / Adhesion Tramway

- In the same period plans were made, but never materialized an extension to Sežana, Slovenia, a distance of some 8km by planned route
- The extension between Villa Opicina & Stazione FS closed in 1938 as little used and the larger bogies could not traverse the tight curve at the end of Via di Prosecco



Hybrid Funicular / Adhesion Tramway (Recap!)

On 26 April 1928 the rack railway was replaced by cable haulage, using two 'new' cable dummies equipped by Theodor Bell of Kriens, Switzerland (another source says the rack locos formed the basis for these)

They were 4.71 m long, and fitted with a pantograph, to supply current for lighting rather than traction

These tractor cars were known in Italian as *carri scudo*, literally shield cars

Source: <https://www.lrta.info/archive/mag/articles/art0301.html>

Hybrid Funicular / Adhesion Tramway

- The crossing loop at Romagna on the funicular section with cable buffer (shield) cars 1 and 2 (3rd generation?) in charge of passenger trams. (*A. di Matteo*)



Funicular Cable Shield (Buffer) Cars

- 1978, the funicular cars were replaced
- The new cars no longer had a box-shaped structure like the first cars, but only a small cabin for the operating personnel
- In 2005, the funicular cars were replaced again
- The latest generation of funicular cars no longer have a cabin or a pantograph
- Now remotely controlled by the drivers of the motor trams



Modernization

- After nearly 60 years of private ownership, taken over by municipality of Trieste in 1961 and operates as Line 2
- Modernized several times
 - 2005-2006
 - 2012-2014



Tramcars

- Two of the original four-wheel cars have survived, and one sees occasional use as an operational museum car
- Daily use are four of the five 1935-built tramcars with two similar dating from 1942
- Two new unmanned rebuild (?) cable tractors provided 2005-2006 – operated by the tram drivers



Tramcars

- 1935-6 the original passenger cars were replaced by five new steel-bodied four-axle bogie trams of conventional appearance, numbered 101-5
- Built by Officine Meccaniche della Stanga (OMS) of Padova, with electrical equipment by Teconomasi Italiano Brown Boveri (TIBB)
- Each of the 50-seat trams is 13.37 m long, 2.5 m wide and 3.45 m high, with an unladen weight of 16.8
- The Brill-type BF3/1 bogies have a 1.82 m wheelbase and the bogie centre separation is 8.92 m
- Four 25 kW motors permit a maximum speed of 35 km/h
- TIBB hand controllers are equipped for rheostatic braking
- There are also air brakes, hand-wheel operated mechanical braking, and electro-magnetic shoe brakes
- Source:
<https://www.lrta.info/archive/mag/articles/art0301.html>



Historical Restoration

- Restored museum tram car 1 at the Piazza Oberdan terminus on centenary day, 9 September 2002. (*A. di Matteo*)
- Car 1 survives as a museum piece after being restored by the local tramway staff in 1992
- Carries the green livery of the 1920s
- Renumbered 111, and more recently 411, and is now claimed to be the oldest tram still running in Europe today

Historical Restoration

- Car 6, later renumbered 412, was displayed for over 10 years in the Railway Museum of Trieste at Campo Marzio station
- Car 6 has undergone complete restoration to running order by the naval workshop Quaiat, together with the third rack locomotive



Second World War to the Present!

- The Opicina tramway suffered only minor damage during the Second World War, the allied bombing being concentrated on the docks area
- In 1944 the partisans put a mine on the track, and one tram was damaged
- During the 40-day Yugoslav rule in 1945, the trams had red stars painted on their sides and displayed Yugoslav flags
- 1948 saw the tramway carry its maximum number of passengers, 3.16 million, but with the expansion of competing bus services and the rise in private motoring the number of passengers has reduced dramatically
- Feeder bus services have now been introduced from Villa Opicina to surrounding villages
- September 1955 the freight service ceased

Notable Event – 14th August 2016!

Trams 404 and 405 collided at Conconello passing loop in the upper section

8 passengers and 2 drivers injured, both cars badly damaged

Service suspended and replaced by buses

During suspension, 2 cars left in open and third abandoned in Trieste

Trams 404 & 405 repaired by 2017 and regional council provided euro 3 million to restore tramway

18 December 2024 testing began without passengers

Notable Event – 1st February 2025!

- Tram operations resumed!
- Part of the Trieste Trasporti network
- Operates as Line 2
- Services run typically every 20 minutes 07:00 – 20:00





Line No 2 – Tram 404

Line No 2 - Technical Summary

- Transit type: hybrid tram / funicular
- One line: Route No 2 of the Trieste Trasport public transport
- Number of vehicles: 8 tramcars + 2 cable tractors
- System Length: 5.2km (3.2mi), Cable section 799m (2,621ft)
- Single* track: 11 intermediate stops & 4 passing loops
- Track gauge: 1,000mm (3ft 3 3/8 in)
- Electrification: Overhead line 550v dc
- Elevation: rises from 3m AMSL** to 329 AMSL
- Number of stops: 11

* See Tram route

** Above Mean Sea Level (AMSL)

Line No 2 - Route

- Divided into three distinct sections – Lower, Funicular & Upper
- Lower short section, street running
- Funicular cable section in own right of way with short stub siding lower end to park cable tractor off running-line
- Passing cable loop at Romagna – used in normal service

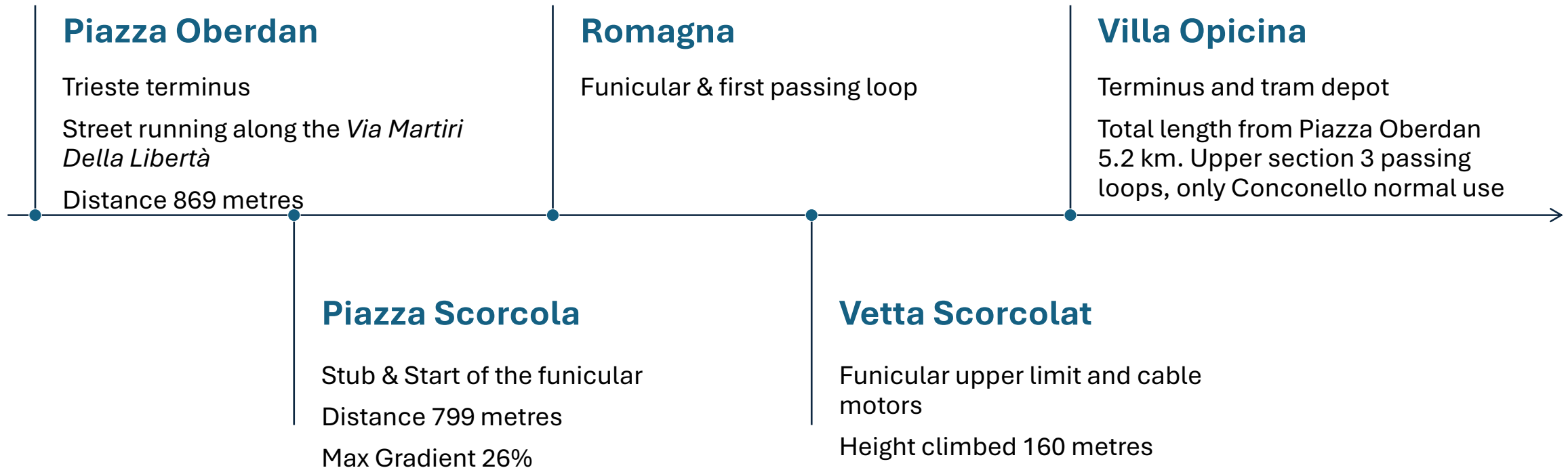


Line No 2 - Route

- Up to Romagna single track
- From Romagna to Vetta Scorcola is closely spaced double track
- Longer upper section, from *Vetta Scorcola* to *Villa Opicina*, is mostly on roadside reservation or private right-of-way in open rural country



Line No 2 Sections



Line No 2 Stops

- From the Trieste end of the line, the line serves stops at:
- *Piazza Oberdan* (terminus)
- *Piazza Scorcola*
- *Sant'Anastasio*
- *Romagna*
- *Vetta Scorcola*
- *Cologna Campo Sportivo*
- *Cologna Chiesetta*
- *Conconello*
- *Banne*
- *Obelisco*
- *Campo Romano*
- *Via Nazionale*
- *Villa Opicina* (terminus)



Let's take a trip
along the three
distinctive
sections –
starting in Trieste



Piazza Oberdan
(awaiting track
renovations) and
Temporary
Terminus Piazza
Dalmazia 100
Metres up the line



“Colonials & Friends”
from the Swiss & Italian
Railway Societies ready
for the trip

Line No 2 –
Piazza
Dalmazia :
All Aboard!



Line No 2 –
Piazza
Oberdan /
Scorcola



Piazza Scorcola

Line No 2 Funicular – Lower End with Stub siding



Line No 2 – Funicular *Piazza Scorcola*



Line No 2 –
Funicular
Piazza
Scorcola



Line No 2 –
Funicular
Piazza
Scorcola

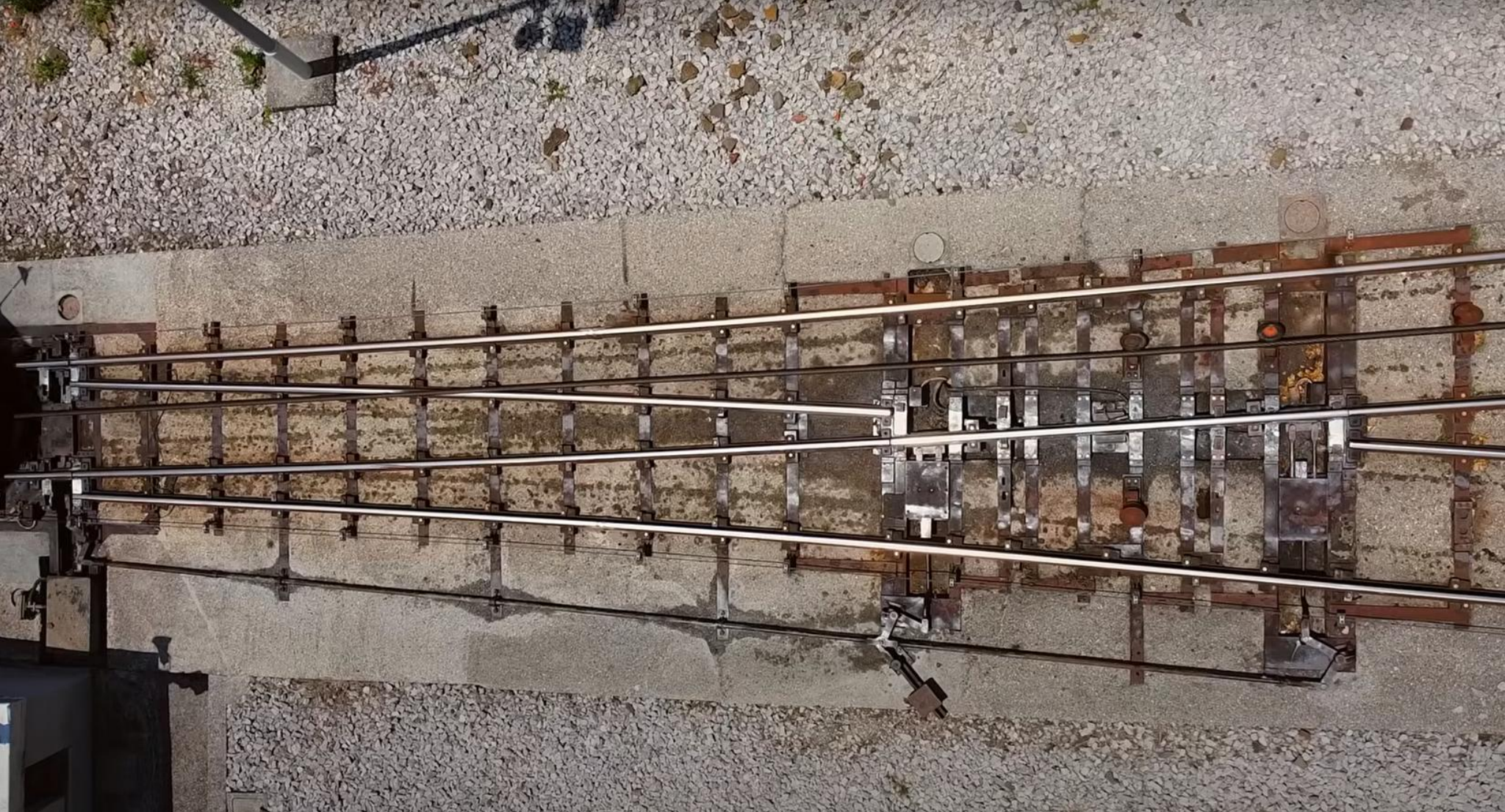


Line No 2 – Funicular



Line No 2 –
Passing cable
loop at
Romagna





Special Electro-Mechanical Switch

Moved a few seconds after the two trams cross

See acknowledgments for
more information

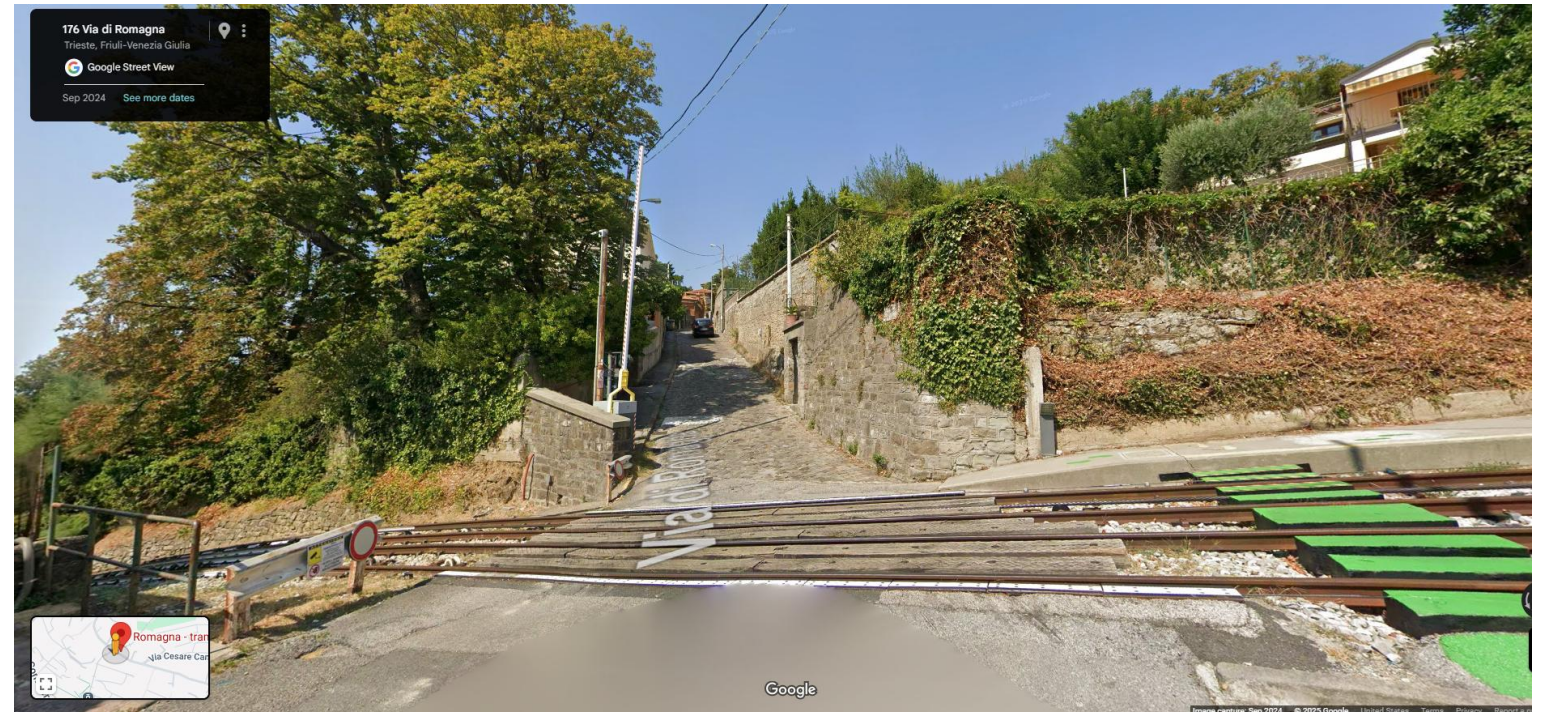
Line No 2 –
Passing cable
loop at
Romagna



Line No 2 – Via di Romagna Crossing



Line No 2 – Via di Romagna Crossing



Line No 2 – Vetta Scorcola



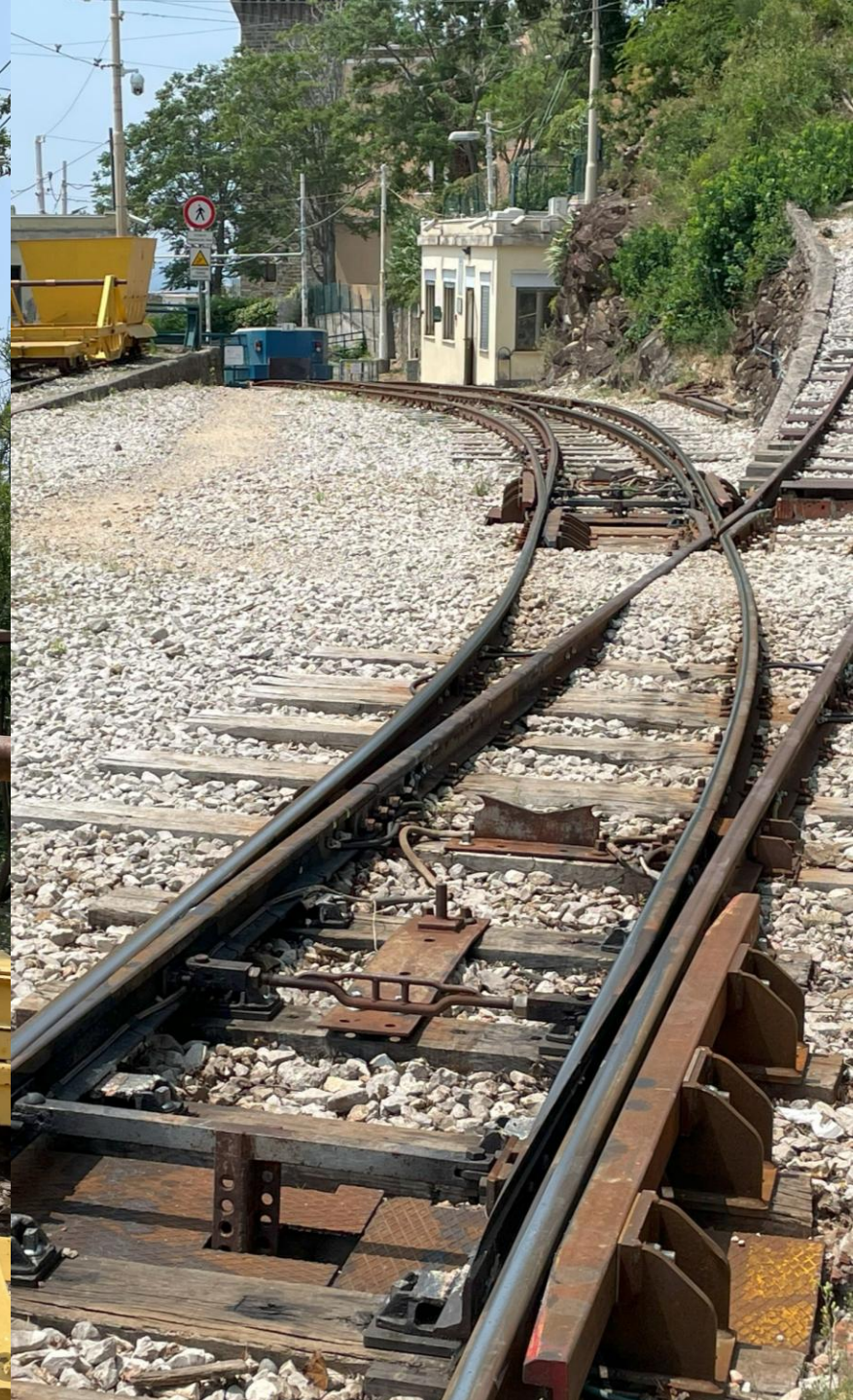
Line No 2 – Vetta Scorcola



Line No 2 –
Vetta
Scorcola
Engine Room
& Winch



Line No 2 –
Vetta
Scorcola



Line No 2 –
Vetta
Scorcola



Line No 2 – Cologna Campo Sportive



Line No 2 –
Cologna
Campo
Sportive



Line No 2 –
Cologna
Campo
Sportive
Sleeper
anchors



Line No 2 –
Conconello:
Second
Passing Point



Line No 2 – Obelisco



Line No 2 – Obelisco

- Located 359 m above sea level
- Commissioned by Trieste Chamber of Commerce
- Designed in 1834 by Biagio Valle
- Completed on March 30, 1839
- Commemorates opening of the Napoleon Road from Trieste to Ocre for “mutual benefit of Italy & Germany”





Line No 2 – View from Obelisco

Trieste and south

Line No 2 – Campo Romano



Line No 2 – Via Nazionale



Line No 2 – Via Nazionale



Line No 2 – Villa Opicina



Line No 2 – Villa Opicina



Line No 2 – Villa Opicina

The scene at the Villa Opicina terminus in a snowy November with the depot, and tram station to the right. (*A. di Matteo*)



Ticket Pricing - 2025

- Daily ticket for the entire TTI network: euro 3.50
- <https://www.triestetrasporti.it/it/tariffe-agevolazioni>



TRASPORTO PUBBLICO LOCALE

REGIONE AUTONOMA
FRIULI VENEZIA GIULIA

TRASPORTO PUBBLICO LOCALE

TARIFFE PER I SERVIZI DI LINEA

SERVIZIO URBANO

TARIFFE IN VIGORE DAL 1° GENNAIO 2025

(acquisto in rivendita, biglietteria o emettitrici)

BIGLIETTI		
U01	biglietto orario (60 minuti)	€ 1,50
U02	biglietto orario (75 minuti)	€ 1,85
U24	biglietto giornaliero intera rete	€ 3,35
U10	biglietto orario pluricorsa (60 minuti)	€ 13,50
U20	biglietto orario pluricorsa (75 minuti)	€ 16,65

La durata temporale dei biglietti da 60 e 75 minuti **nelle sole giornate festive** è di 240 minuti (4 ore).
I biglietti sono utilizzabili **solo** sul servizio urbano indicato sugli stessi, a eccezione del **titolo giornaliero intera rete** che può essere utilizzato in **tutti e sette i servizi urbani** entro la mezzanotte del giorno di convalida.

ABBONAMENTI			
		1 linea o tratta	intera rete
QUINDICINALE	ordinario corse illimitate	€ 21,25	€ 24,80
	ordinario corse illimitate	€ 32,00	€ 39,20
MENSILE	fasce di morbida	€ 25,60	€ 31,35
	maggio prolungato a fine scuola	€ 42,65	€ 51,60
SEMESTRALE	ordinario corse illimitate	€ 160,00	€ 196,00
	fasce di morbida	€ 128,00	€ 156,75
	ordinario corse illimitate	€ 320,00	€ 392,00
	fasce di morbida	€ 256,00	€ 316,75

Trieste Trasporti



Further information & Acknowledgements

- Trieste Trasporti - <https://www.triestetrasporti.it/it/muoversi-trieste-0/linee-percorsi-orari#linee-principali>
- Trieste Tram Tour - <https://www.triestetrasporti.it/en/trieste-tram-tour>
- Trieste Trasporti Ticketing - https://s3.eu-central-1.amazonaws.com/it.tplfvg.media/media/documents/tariffe_servizi_urbani_2025.pdf
- Light Rail Transit Association - <https://www.lrta.info/archive/mag/articles/art0301.html>
- Trieste – Opicina Tramway https://en.wikipedia.org/wiki/Trieste%E2%80%93Opicina_tramway
- Travelling on an historic tram that has been in service for 90 years? 35 minutes video by Lost Structures Industrial & Military Archeology Channel <https://www.youtube.com/watch?v=AoxQQGyGfil>
- La Tranvia Trieste-Opicina – Andrea Dia: Elektrische Bahn Triest-Opicina, Luglioeditore, ISBN 8868031800
- Special thanks to Bill Salter – ETE Colonial New England Chapter
- Researched information believed correct, but E. & O. E. Corrections welcomed

Questions?



A photograph of the interior of a tram. The tram has wooden paneling and maroon-colored seats. Several passengers are visible: a woman with blonde hair and sunglasses is sitting on the left, looking at her phone; a man with glasses is sitting next to her, looking towards the center; a woman in a red jacket is standing in the aisle; and a man with grey hair is sitting on the right, facing away from the camera. Large windows on the sides of the tram show a street scene outside. The title 'Tram di Opicina' is overlaid in large white text in the center of the image.

Tram di Opicina

NMRA Metro-North – Saturday 17th January 2026

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