

TiLOS case study

Thames Tideway Tunnel

TiLOS Helps Tideway Teams to Visualise and Integrate Plans for 25km London Super-Sewer



Summary

Thames Tideway Tunnel is the largest ever infrastructure project undertaken by the UK water industry, and will create a major new sewer that runs for 25km along the path of the River Thames in London. This vast project has multiple project teams, multiple construction sites and schedules, and requires absolute precision at every point of integration. To give project and business leaders the overarching view that they need, it uses TiLOS to create a one-page visualisation that helps form a foundation for monthly team meetings, scenario brainstorming, and inter-team collaboration.

The Thames Tideway Tunnel is a major new sewer, urgently needed to protect the tidal River Thames from pollution, and is due to complete in 2023. As this major project progresses it is vital for all contractors to appreciate and assimilate the whole project, to integrate their works, plan and collaborate effectively. It is for that reason that TiLOS has been in use since 2010 to help visualise the entirety of the works. This is a vast project which stretches 25km along the route of the River Thames, lies 65m deep, and which will create a tunnel more than seven metres in diameter. It



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TiLOS is a software application that is designed for planning, managing and delivering linear construction projects. It combines the flexibility of a drawing package with the power of project management, and to exchange data seamlessly with other major project planning software packages, including the one that is used for the Tideway programme planning.

Evangelos Kovaiois is the Integration Scheduler – Programme Controls for Tideway, and plays a central role in ensuring that works between the West, Central and East project teams, the systems integrator, and the Tideway Integration Group (TIG), are

all effectively scheduled, integrated, and communicated across the whole team. For almost five years he has been working to evolve the use of TiLOS for maximum effectiveness, liaising closely with Elecosoft to shape and fine tune the template around the complex requirements of this significant, multi-party project, and create ever-clearer visual representation. Today, TiLOS delivers an unparalleled, complete overview of the Thames Tideway Tunnel project which informs monthly integration meetings and forms an essential part of board communication for stakeholder organisations.

There are seven essential benefits which he believes TiLOS brings to the project:

Tell the whole project story in one page

“TiLOS gives us the ability to tell the whole project story graphically on one single page. That is very important for Tideway because, including all

“ TiLOS is amazing
– it gives us the whole
project in one page. ”

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the contractors, we have between 50-60 thousand activities to manage. A percentage of these are pulled into a summarised Project Master Programme in TiLOS, which has around 1000 activities that represents our construction programme. It is all on a single page and we can see it graphically – we print it in A0 format and put it on the wall. It gives us the dimensions of time and distance which Primavera alone cannot do.”

Anyone on the team can understand the plan

“TiLOS makes it easy for anyone on the project to understand the programme, and it really works excellently as a communication tool between the project teams for East, West and Central sections, and the system integrator. We also include the enabling works within our TiLOS plan, since we can’t start work on any site until they finish their activities. Because everybody on the team uses the same single page of information, communication is working very efficiently.”

“ I would recommend TiLOS to anyone for construction projects that have to cross distance.”

Collaborative ‘what if’ scenario planning

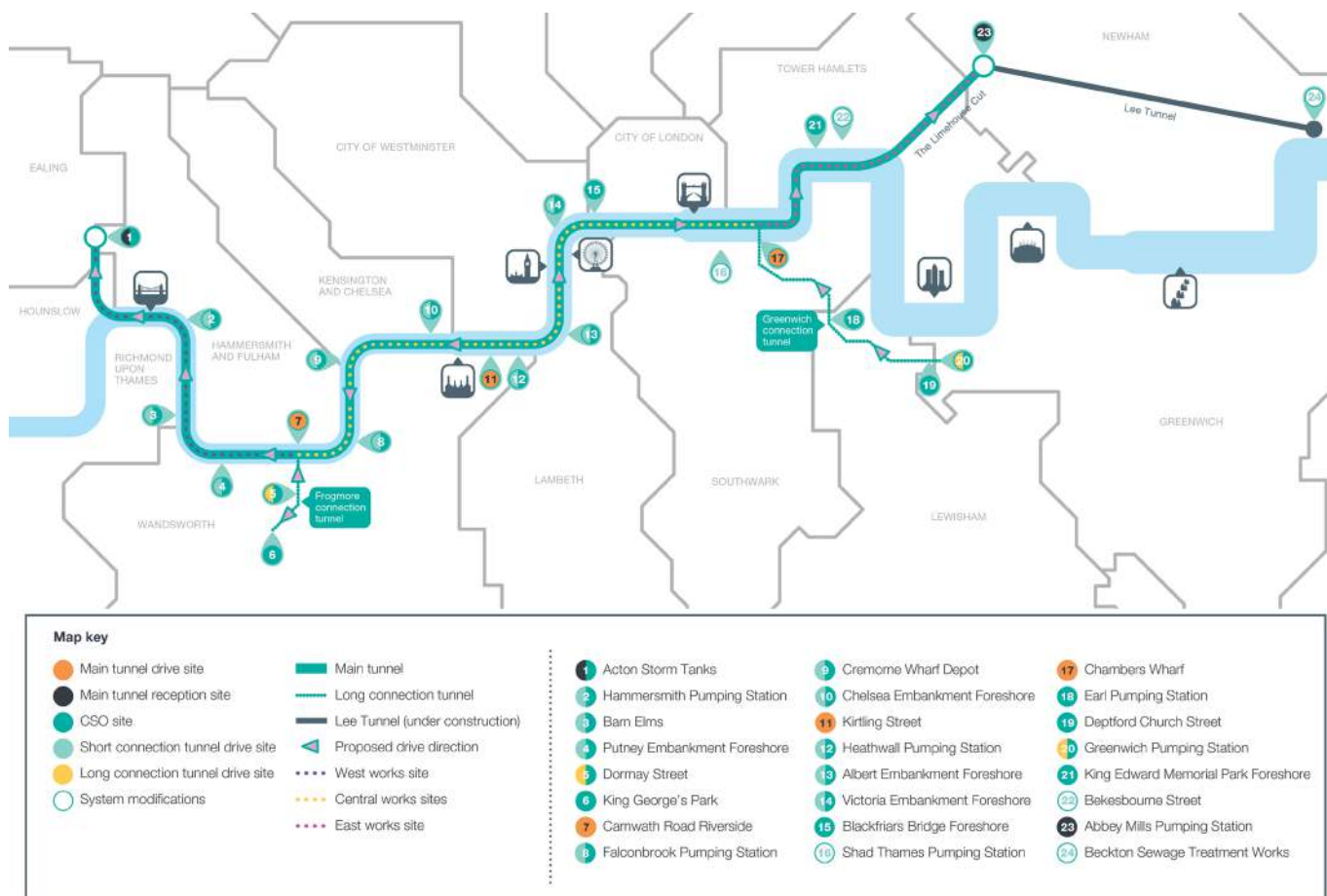
“The Tideway project has three major contractors working together, who need to collaborate and integrate their schedules all the time. Using TiLOS it is very easy for us to do that, create ‘what if’ scenarios, and assess any opportunities we have on the project. Construction managers have a visual representation, then based on that can suggest different ways to do the tunnelling or interfaces. They can draw lines on the paper and come up with lots of ‘what if’ scenarios fast – within an hour we can have multiple scenarios worked out, and see the impact of each one on the actual integration of the programme.”

Clear sight of the critical path

“Each individual team develops their own programmes in silos, but then we need to glue the programmes together with interface milestones between them. We can integrate the schedule in our project planning software, but then the critical path changes. TiLOS now becomes even more useful. We produce the TiLOS after the integration, and can actually see the critical path on one page. That way, we know what affects what, can see if we need to change the logic, or start a new ‘what if’ scenario.”

Providing focus for integration meetings

“Our TiLOS is used in every integration meeting – we can’t go ahead until we have produced it. Because every single person in the team has a TiLOS output in front of them, we’re all talking the same language. There are usually at least 12 people at each meeting, including delivery managers, planners, construction managers and others. Everyone expects to have the TiLOS



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printout in front of them, or they cannot see what is going on. It put everyone on the same page, even though many people will log in via Skype from remote locations. They say a picture paints a thousand words, and it is true here: TiLOS is a really excellent communication tool.”

Essential for high-level reporting

“TiLOS is amazing – it gives us the whole project in one page. It’s so valuable that it has been used for the past year in the official board report for each project period. It’s easy to create what if scenarios so we run two versions of the programme: the non-mitigated and the mitigated version for the board.”

“We have used the ‘what if’ scenario planning capability of TiLOS in our QRSA risk analysis and reporting process. Each quarter we run a risk analysis and model two scenarios, which assume 50% and 80% of identified risks occur. This year we started modelling these programmes, called P50 and P80, in TiLOS. People can now see the comparison on a single page between our baseline, our current forecast and the P50 or P80 forecasts, along with the impact on completion timeframes. So, when we look at any particular area, such as Tunnel B that runs between Kirtling Street, in Central, to Carnwath Road, in West, we can see exactly where we will be if the P50 risks are realised.”



Effortless programme planning data exchange

“The easy and automated integration with our programme planning software is ideal. In fact, I don’t think we would be successful without it. We programme in another software package, but TiLOS has the amazing capability to suck all the information out and create an output automatically. Without this automation we would never be able to turn around such a quick representation of our plans. The planning maturity and the TiLOS template we have evolved in the past few years mean that for each TiLOS output now only takes us 10 minutes to create the PDF.”

“Speed is essential when we integrate the programmes. Each period there is

a ‘data date’ by when all contractors must report their progress, then there is a short time of checking and manipulating, accepting or rejecting information. Once that ends, from the point that data is locked down in the programme planning software each period, we have less than a day to generate the summary programme and our integrated TiLOS view, ready for the integration meeting. Because of the TiLOS integration with the planning software we can generate everything really quickly.”

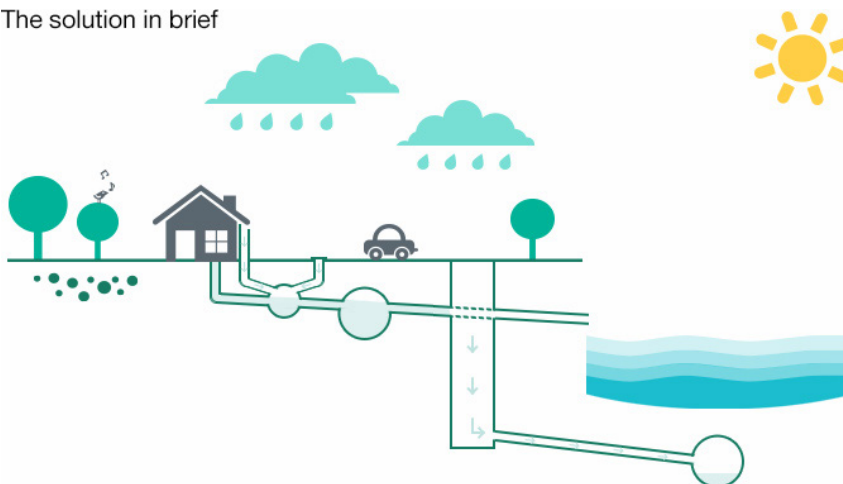
“We don’t use TiLOS for most of the month, but on that single day it is critical – it can exchange information with the planning software, and produce the output automatically and quickly, so we don’t have to do any slow data input or typing.”

In conclusion, Evangelos added these final comments:

“TiLOS enables us to answer most questions, even if we weren’t previously prepared for them. It makes a complex project easier to see, gives a picture that is not confusing. I would recommend TiLOS to anyone for construction projects that have to cross distance.”

“Elecsoft has been an amazing help. Our senior contact there is always there on the phone to help – and if he doesn’t know the answer he’s quick to ask the helpdesk team or development team to help. The communication is excellent – they come back to us within hours. I know that if anything ever goes wrong, I can just call him.”

The solution in brief



Now:

The low level interceptor sewers fill up and overflow into the River Thames.

After:

The overflow will be diverted into the tunnel instead of going into the river.

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Tideway - PMP Construction Integrated Programme Based on the STB Delivery Area PMPs

	TIG Works
	Early Works (MWC)
	Mobilise Shaft Site
	Shaft Excavation & Build
	(Above Ground) Structures
	TBM Assembly
	TBM Launch
	Main Tunnel Drive
	TBM Strip Out
	Tunnel Secondary Lining
	Short Connection Tunnel
	Meica, Testing & Commissioning
	Finishings

Notes

This Time Charge Programme relates to the latest Contractor's Construction Programme captured in the PMPs
Based on the STB Delivery Area PMPs

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Revision History	Description	Drafter	Checked	Approved	Date



Project Name:	TIDEWAY
Prepared by:	Evangelos Kovatlos
Drawing Title:	PMP Construction Integrated Programme
Rev:	

