

SOCIAL IMPACT

Summary report on Tideway's evaluation of its legacy programme

February 2023



TIDEWAY IS BUILDING A 25KM TUNNEL TO CREATE A HEALTHIER LONDON

Every year, millions of tonnes of sewage spills into the River Thames. From 2024 the Thames Tideway Tunnel will start to intercept these spills and clean up the city's greatest natural asset. It will become fully operational in 2025.



THE RIPPLE EFFECT

Beyond the project's core environmental benefit, we realised Tideway could deliver so much more.

Every decision we made had the potential to create positive 'ripples' – make a difference to society and the environment, locally and beyond.



Our experience might also help others to deliver more sustainable infrastructure.

We may not get every decision right. But if we understand and measure the impact of what we did, every step of the way, we can share those lessons. And others can do even better.

We call this the ripple effect. This is how we did it.

INTRODUCTION

This summary report highlights the key findings from the social impact study of the Tideway Legacy Programme.

It includes the benefits that have come from Tideway's Legacy Programme **above and beyond** legally-binding baseline targets. For example, it does not include benefits that were delivered in line with planning consent requirements. The study also does not take account of the core benefits derived from the operation of the Thames Tideway Tunnel, of which water quality benefits represent by far the largest proportion.

We believe the study therefore sets a high bar for measuring social value beyond the baseline requirements.

More specifically, the key focus is on Tideway's commitments to health and safety, a more resilient environment, employment and equal opportunities for everyone, innovation, arts and public realm, education and skills development, and volunteering.

In other words, not just completing the project, but doing it in a socially and environmentally responsible way.

The study we commissioned is a robust social cost benefit analysis of these collective actions.

Integrity

Social value is a relatively new sector and discipline. The last 10 years have seen several different approaches in the construction sector, mainly around a 'value bank' approach.

This takes a long list of likely projects outcomes and assigns them a monetary value.

The result is that a Social Value report is produced. And the social value 'box' is ticked.

Job done. Or is it?



Additionality

Tideway and State of Life (Tideway's social value consultant) began working together in 2020 to evaluate the <u>Tideway Legacy Programme</u>.

The approach was led by the requirements of HM Treasury Green Book guidance on policy appraisal and evaluation, which recommends the use of Social Cost-Benefit Analysis (Social CBA).

Here, any appraisal or evaluation only has meaning when performed in comparison with at least one alternative scenario. In other words, what would have happened anyway?

In the case of a major construction project, with a lot of regulation and rules, there is a lot that has to happen – and therefore would have occurred anyway. Tideway decided to count only those results that were truly 'additional' and beyond minimum consenting requirements.

Credibility

This approach is more onerous and likelier to show a lower return on investment. But we believe that a more credible story has more value than a questionable big number.

Since we began this approach, we've noticed that there's an increasing push towards only reporting social value that is credibly measured and created by a project. We hope our work here contributes towards this trend.

What we measured

We discovered that some of Tideway's 54 Legacy commitments, which were first developed in 2014, were not conducive to social impact and value measurement, because they related to the development of mission statements or policies.

From the 54 Legacy commitments, we identified a set of 11 measurable and socially desirable outcomes brought about by Legacy activities.

Together, these 11 Valuation Focus Areas (VFAs) – measured from 2015 to 2025 (with years beyond 2021 forecasted) – form the basis of our social value findings.

- 1 Greenhouse gas emissions
- 2 Health, Safety & Wellbeing
- 3 Taking lorries off the road
- 4 Additional employment
- 5 Apprenticeships
- 6 Employment for people with convictions
- 7 STEM education
- 8 Paying the London Living Wage
- 9 Volunteering
- 10 Employing locally
- **11** River Reconnection Partnerships

In addition to this quantative evaluation, we commissioned a qualitative research component, the findings of which can be found in the second half of this report.

A growing return on investment

So, what is our social value?

For each £1 spent on Tideway there is a return on investment of £1.72, with the future value unknown.

From a policy perspective, a Return on Investment (ROI) of $\pounds 1$ to 2 is positive.

Although it isn't a huge social value figure, it should be remembered that it does reflect our value over and above minimum requirements and the story it shows is more promising and authentic.

The Legacy Programme was first developed in 2014, when knowledge and standards around measuring social value were in their infancy. At the start we see a period of upfront investment which leads to a negative net benefit in the years 2015 - 2017.

However, as is typical in investments of this kind the upfront investment starts to evolve over time into a period of steadily growing social value, as the benefits of the investments start to kick in.

We can see that a social Benefit Cost Ratio (BCR) of 0.55 in 2016 grows into a considerably higher social return on investment of 4.68 in 2020 and 3.56 in 2021 (see the full Technical Report for relevant tables). These figures are much higher than policy appraisal would expect to see.

Then there is the question of the future value of the Legacy Programme. There may be some lasting benefits here that carry on beyond the construction period (such as public realm investments or supporting STEM careers).

We don't have sufficient data to report on these at time of publication but – given the trajectory of the social BCR over the years – we have forecast the social BCR for the final years of construction (2022-2024) to be 4.61 dropping to 2.55.

Conclusion

The result is that Tideway can be confident about reporting a positive net benefit for the Legacy Programme.

Within each of the 11 VFAs measured, we've benefited society, above and beyond the construction industry's 'business as usual'.

We hope that this in turn will inspire and support others in the sector to build on our successes, and learn from our mistakes, to create even stronger legacies.

And while our deliberate pursuit of a more structured, credible methodology has tempered overall calculations, we are setting up a standard in the industry for robust, credible social value analysis that leaves a valuable contribution for the infrastructure sector.

This work paints a strong picture of social value and a growing social BCR as the legacy project kicks in.

In the most recently measured years (2020 and 2021) we are seeing the social BCRs of over £4 for every £1 invested in 2020 and over £3 in 2021. We believe this is something that everyone at Tideway can stand behind and be proud of.

On the following pages, you can find out more about the Tideway social impact story.

For the full Technical Report, please <u>click here</u>.

Inside the shaft at Acton Storm Tanks

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EXCELLENCE

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1. GREENHOUSE GAS EMISSIONS

The original prediction for Tideway's total carbon footprint was **840,000 tCO2e***.

Thanks to our carbon-cutting measures, the final project carbon footprint is expected to be **770,000tCO2e**. That's an eight per cent reduction in carbon emissions.

The Tideway Tunnel has a primary and secondary lining, which requires significant quantities of carbon intensive materials, primarily concrete and steel fibres. One of the ways Tideway's Main Works Contractors delivered material efficiencies was by reducing the thickness of the secondary lining. This led to a carbon reduction of 11,800 tCO2e.

* * *

71,244

Cut in CO2 equivalent**

£4.87 million

Social impact value of cutting carbon

*Greenhouse gas emissions (GHGs) are often written as tCO2e; one activity can create several types of GHG, so they are classed as tonnes of carbon dioxide equivalents, or tCO2e. ** The carbon reduction is against the <u>original carbon footprint</u> undertaken for planning.

2. HEALTH, SAFETY & WELLBEING

Health and safety at work is crucial in the construction industry; fatalities are four times more frequent than in any other job.

To date Tideway has had a lower incident and injury rate compared to HSE published data for the construction sector. The social value of accident prevention accounted for almost a fifth of Tideway's total social impact value – more than any other measurement category.

19%

A serious injury is when someone needs to go to hospital and may be kept in for treatment. They include fractures, concussion, internal injuries and severe cuts. Tideway's record to date in preventing accidents can partly be attributed to rigorous health and safety training delivered as part of our EPIC (Employer's Project Induction Centre) scheme – see case study on page 24. More than 20,000 people have now taken part in EPIC.





Social impact value of accident prevention

3. TAKING LORRIES OFF THE ROAD

Heavy Goods Vehicles (HGV) are responsible for 18 per cent of the UK's road transport emissions. But not everything needs to go by road.

Where possible, Tideway used the River Thames to transport construction materials and excavated waste.

There were three core benefits to using the river instead of road: lower greenhouse gas emissions, reduced traffic congestion and fewer road traffic injuries and fatalities.

£16 million

Social impact value of removing lorries from the road network

HGV REDUCTION

Building Tideway was expected to require road transports of 43,436,469 km by heavy goods vehicle (HGV). By prioritising the Thames, we cut this to 12,383,298 km – **a reduction of 71.5 per cent.**



Expected HGV transport km

12.3 MILLION KM

Actual HGV transport km

4. ADDITIONAL EMPLOYMENT

It's well understood that unemployment is linked to lower personal wellbeing. On the flipside, giving an unemployed person a job can boost their wellbeing significantly.

Over the length of the project, Tideway employed more than 1,000 workless people – 290 in 2019 alone – contributing hugely to their life satisfaction and social impact.*

£4.8 million

Social value of additional employment

* Having a full-time job is equivalent to 0.473 on the Office of National Statistics 0-10 scale of life satisfaction, where 1 =£13,000 per year.

Predicted workless

people employed by Tideway from 2016-2024

5. APPRENTICESHIPS

Apprenticeships give young people life-changing on-the-job training, improve career prospects and research shows they create a greater sense of life satisfaction.

State of Life quantify the wellbeing effects of apprenticeships in construction as more than twice that of being married or having a partner, and similar to elevating someone's health status from 'good' to 'excellent'.

162 The total number of Tideway apprentices

Tideway apprentices who worked on the project for 12 weeks up to end of 2021. Tideway signed up to employing apprentices as a Section 106 and DCO commitment – specifically, one in 50 FTE to be an apprentice. As we're not counting benefits that would have happened anyway, the social value measured here only includes apprenticeships over and above this target, which is why the overall value is relatively low. Our programme included the first cohort of Tunnelling Operative apprentices in the industry.

£624,000

Social value of Tideway apprenticeships above the minimum requirements

6. EMPLOYMENT FOR PEOPLE WITH CONVICTIONS

The government says many people with convictions find it almost impossible to get a job, with just 17 per cent in salaried employment a year after release.



The number of people with convictions that Tideway hired throughout the project. Further details can be found <u>here</u>.

Many employers are reluctant to hire people with convictions, but a lack of stable employment may lead to re-offending, creating an ongoing negative cycle.

Employment can provide a sense of security, increase self-confidence and help break the cycle of re-offending.

£2.3 million

Estimated social value of employing people with convictions

7. SUPPORTING STEM

Throughout the project, Tideway has worked with several charities to encourage young people into STEM (Science, Technology, Engineering and Maths) careers. We have engaged more than 80,000 young people and worked with more than 400 organisations on STEM. Find out more on <u>our website</u>.

As we're looking several years into the future, it's hard to know exactly how many will successfully pursue a vocation in construction and engineering. But our conservative assumptions and calculations translate the impact of these activities into around 1,400 future STEM careers.

£8 million

Social value of supporting STEM careers

Researchers estimate the social value of encouraging a young person to pursue a STEM career as \$5,709.

After calculating the success rate of Tideway's activities in inspiring young people to follow careers in STEM, we used this figure (adjusted for income growth and inflation) to determine the social value over the length of the project.

80,000+

young people encouraged into STEM careers throughout the Tideway project

8. LONDON LIVING WAGE

Protecting your workers also means paying them properly.

The cost of living in London is higher than the rest of the UK, so the Living Wage Foundation has calculated a wage that meets Londoners' everyday needs: the London Living Wage (LLW). Tideway has paid the LLW to everyone working on the project.





£11.95 per hour London Living Wage



The National Minimum Wage

£15.1 million

Social impact value of paying the LLW

Figures accurate as of 2022. LLW and National Minimum Wage increase every year. https://www.trustforlondon.org.uk/issues/work/london-living-wage/ https://www.trustforlondon.org.uk/data/low-paid-jobs-in-London/

9. VOLUNTEERING

Volunteering is good for everyone; it benefits society and the volunteer. Tideway's staff volunteering activities included river foreshore clean-ups, running school workshops and supporting food banks, among many other good causes.

As well as benefiting others, volunteering is proven to reduce stress, provide a sense of purpose and build strong social connections^{*}.



Our researchers used a wellbeing valuation technique to quantify the increase in life satisfaction over 12 months as £911 per volunteer, per year. The overall benefits to society are harder to measure, but we used a wage-replacement approach to estimate the costs if Tideway's volunteers had been replaced by paid staff**.

* Volunteering and its Surprising Benefits, HelpGuide.org

https://www.helpguide.org/articles/healthy-living/volunteering-and-its-surprising-benefits.htm

** MWCs list the number of volunteers for each activity but do not record whether the volunteers from different activities are distinct. So this is estimated based on 54 per cent of the sum of staff numbers from Tideway and all MWCs.

Social value of volunteering impacts

10. EMPLOYING LOCALLY

Tideway has committed to employing locally, including in the local borough of the largest site in each contract area and the 14 London boroughs where work is taking place.

The impact of hiring local workers means a reduced commute – so less pollution and an increase in personal wellbeing – and a greater sense of community.



£1,060/YEAR

Wellbeing value of commuting for less than 15 minutes a day, compared with 1-2 hours

Our researchers focused on the wellbeing value of a reduced commuting time because there are no economic benefits (in terms of increased output or employment) of employing locally; someone living further away would benefit in the same way from the work.

£2.3 million

Social value of employing locally

11. RIVER RECONNECTION PARTNERSHIPS

Tideway funded several partnerships to support our vision of reconnecting Londoners with the River Thames, including a major investment in the Thames Skills Academy. The two biggest ones assessed for social value were Active Row and Thames River Watch, run by charities London Youth Rowing and Thames21 respectively.

Active Row: at a glance

Four-year programme to get more school children rowing on the Thames.

Approx. 2,850 participants per year £404,000 funding from Tideway

Benefit-cost ratio: £40.30 social value for each £1 invested

For more about Active Row, read our case study on Page 31.

Thames River Watch: at a glance

Volunteering programme for local people, removing litter and raising awareness about pollution.

350 participants per year £855,000 funding from Tideway (2015-2021)

Benefit-cost ratio: £2.63* social value for each £1 invested

£15.8 million

Social value of Active Row attributable to Tideway investment (2017-2022)

£2.37 million

Social value of Thames River Watch attributable to Tideway investment (2015-2021)

* Due to low survey response numbers we have applied strong discount rates to the wellbeing estimates of the Thames River Watch (TRW) programme in our main valuation framework. TRW's benefit-cost ratio was calculated as £26.30. But to be more conservative, we only include 10 per cent of it here.

LESSONS LEARNED

The Tideway Legacy Programme learned several important lessons about valuing legacy programmes.

These could be very helpful for other major infrastructure projects seeking to conduct future social value assessments:

1.

SET THE SCOPE

Have a clear idea of what is to be evaluated and what should be left outside the scope of the exercise.

2.

THINK SMART

Define the programme/intervention to be valued in terms of specific, measurable and achievable (SMART) outcomes

3.

MAKE IT PROVABLE

Ensure that the social value of the indicators related to a particular objective can be easily proved

4

DEFINE THE PROCESS

Set up a process for data collection / monitoring / reporting so that the unit quantity for these outcomes can be easily determined

BE PREPARED

Make a plan for social value assessment before you start the programme.

For more detail about each of these lessons learned, please see the full Technical Report.

Aerial view of Blackfriars, central London 2023

CASE STUDIES

Stories from the Tideway Legacy Programme

case study H&S TRAINING WITH A DIFFERENCE

One of the biggest issues with health and safety training courses is that participants feel they've heard it all before. To beat this problem, and build a safer working environment, Tideway decided to take an alternative approach to traditional inductions and create something that would test and challenge everyone who took part.

The result was EPIC (Employer's Project Induction Centre) – a one-day immersive experience, created and run by a group of actor-facilitators.

Everyone at Tideway – from site workers to office managers – joins a realistic role-play situation where there's been a fatal incident on a construction site. They have to figure out why it happened, how it could have been avoided and what skills they need to prevent it happening in real life.

The programme has had an incredible impact, both on how employees operate at work and in their personal lives. Feedback showed staff benefit by not only feeling and being safer themselves but they also feel empowered to look after others' health and safety. Tideway's own Health, Safety and Wellbeing survey found over a third of workers have actively stopped someone else from doing something unsafe.

"It has made a lasting impression on me that an accident is a team effort, with many routes to avoidance."

Tideway/EPIC participant

More than 20,000 people have now taken part in EPIC, with around 10 per cent of places offered to workers outside Tideway in industries such as rail, manufacturing and house building.

The innovative training programme has also won a series of awards including Best Health, Safety and Wellbeing Initiative at the British Construction Industry Awards.

Beyond ensuring Tideway's own health and safety record, EPIC's reputation should make it easier for employees to find work once the project is over. We also hope that the EPIC approach is adopted by other major projects and infrastructure companies.

"Many people we spoke to across all our studies told us about EPIC unprompted, and with half the survey respondents reporting being actively engaged with safety, and results that speak for themselves; the impact is certainly real and significant."

Mandy Barnett, social value consultant and Chair of Social Value UK





Dragons Den style panel which encouraged Tideway Teams to bid for funding for a bright idea or invention

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Tideway is a first for London and we've embraced innovation throughout – both to improve our project and the wider construction sector.

Our achievements include trialling one of the first electric (rather than diesel) hydrofraise diaphragm walling machines.

The funding for Tideway's innovations is also rooted in environmental concerns.

We were one of the first companies to raise Green Bonds in 2017 – and have since raised 18 Green Bonds worth \pounds 1.8bn – and have a \pounds 160m sustainability-linked revolving credit facility (RCF). Savings from the RCF are now reinvested into environmental community projects in the 14 London boroughs we are working in.

In addition, Tideway are co-founders of i3P, the Infrastructure Industry Innovation Partnership.

i3P has funded 23 projects to date – including an award of \pounds 50,000 to Dig to Share, a project that stores and shares data about exploratory boreholes:

Every time a new drilling project begins, an exploratory borehole is created but all the information about that borehole is usually stored in private archives.

Dig to Share believes this is not only a waste of time and money, it has a huge impact on the environment.

They persuaded Tideway, Crossrail, Heathrow, the Environment Agency and Network Rail to share their data with the British Geological Survey's database. Now, any new drilling project has access to all that existing information. Not all innovations are high cost with uncertain technical solutions.

Tideway demonstrated that planning, process and project management innovations can be cheaper and the returns more reliable. Dig to Share is one such example.



An innovative, electrically-powered hydrofraise diaphragm walling machine was used to help build the Thames Tideway Tunnel

case study CREATING AN INCLUSIVE WORKPLACE

A diverse workforce encourages innovation, builds trust and respect, and improves staff retention and wellbeing.

So, what has Tideway done to create an inclusive environment, where everyone feels comfortable bringing their 'whole self to work'? They developed the Encompass Programme.

Encompass is made up of five groups that focus on a specific area of diversity:



Each group works to identify and inform the business about issues they might not be aware of – essentially, they're 'reverse mentors' for Tideway. The aim is to give each group a voice and the tools to influence the culture and practices of the company.

To find out how well the programme was working, we carried out a series of small workshops and then a company-wide survey to test the findings. And the answers revealed that Encompass is making a difference.

They found senior management are genuine in their commitment to creating an inclusive workplace. The vast majority of Tideway staff (91 per cent) have seen managers setting a good example and 85 per cent feel respected by their colleagues – both scores consistently higher than industry benchmarks. And though only 6-7 per cent of site workers are women, this is also higher than the UK industry norm.

While there's still work to do, the findings show that Tideway is a progressive and inclusive place to work.



Tideway joins a Black History walk to learn about London's secret alleyways and enormous buildings all connected to Africa and the Caribbean



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case study RECONNECTING LONDONERS WITH THE RIVER

Tideway made a legacy commitment to "inspire people to engage in river activities and support events that will help people reconnect with the river". This case study covers two community investments that helped achieve this.

Creekside Discovery Centre

Despite living next to the River Thames, research shows some residents have never been up close to it. This idea formed the basis of our partnership with Creekside Discovery Centre, a nature reserve at Deptford Creek.

Creekside is one of the most biodiverse sites in London. It has more than 300 species of wildflower and natural riverbank edges that provide a safe haven for plants, invertebrates and fish.

The centre offers low-tide walks, educational talks and hands-on activities for local schools and communities. We gave Creekside a twoyear grant to help support a range of new activities. These included volunteers mapping local plants and wildlife, family days out, and community walks and talks. Creekside also wanted to reach new audiences, particularly disadvantaged families.

The result? Over 1,700 new visitors to the centre, with 67 per cent from the most deprived postcodes in the area.

This success means Creekside has achieved the partnership goal of helping local people reconnect with the river and the natural environment. Staff even say that for some new visitors, their engagement with the centre has been life changing. The centre has also secured replacement funding for three of the programmes launched through the Tideway partnership, so it can continue to reconnect local communities with the River Thames for many years to come.



Tideway provided vital support to urban wildlife charity, Creekside Discovery Centre in Deptford

"Thank you so much for offering such an amazing activity for families. I loved being able to catch and identify bugs with my three-year-old son."

Family learning day visitor

Active Row

Active Row, Tideway's partnership with youth engagement charity London Youth Rowing (LYR), got more than 7,000 young people active through indoor and outdoor rowing over four years - 68 per cent from minority ethnic backgrounds, 42 per cent female and 8 per cent special educational needs. It aimed to support our river reconnection commitment and to improve young people's wellbeing.

Active Row is still running in 70 London schools. Working with State of Life, LYR secured more than 500 survey responses from participants, which gave confidence in the findings and allowed assessment within key groups, including those on free school meals and those from ethnic minorities.

The surveys showed several significant impacts:

- Participation in Active Row was associated with increases in all the personal wellbeing measures and those who have been involved the longest, as well as those taking part most frequently, experience the highest levels.
- The benefits of the programme are about three times higher for respondents on free school meals and about twice as big for those who have a disability
- Across all ethnicities, the highest benefits are experienced by Black and Asian respondents, two ethnicities not traditionally associated with rowing.
- Active Row participants score considerably higher in terms of their self-assessed degree of connection with the River Thames than non-rowers, which is encouraging evidence that the partnership helped to achieve our reconnection aim.



State of Life said the positive impact was larger than other sports programmes they have assessed – and **an overall social benefit against costs of 40:1, or £40 to every £1 invested**. For Tideway's funding share, our £404,000 investment over four years delivered a social value of £15.8 million.

LYR will be publishing a full report on the social value of the programme.

"I joined the Active Row club because it looked fun and a physical activity I would enjoy. Rowing has taught me bravery, resilience and coordination and how to be a better listener. I feel like I am a changed person."

Awa from Harris Academy, Bermondsey

A 100-MILLION-YEAR-OLD 'THANK YOU'

One of Tideway's commitments during the project was to create a public art strategy. There's a growing amount of research showing the positive impact of public art in creating a sense of place, contributing to a distinctive identity and engaging local communities. So, artists have been commissioned to create temporary and permanent works of art celebrating specific sites along the Tideway route.

But not all the creations are for public consumption. Tideway also commissioned a special artwork to say 'Thank you' to the people working underground in the tunnelling teams. Artists Heather Peak and Ivan Morison of Studio Morison took moulds of rock samples excavated during construction to create unique 'rock cups'.

These bone china cups are an homage to the tradition of holding celebratory meals or dinners in completed tunnels. They're decorated with glazes named after the Tideway tunnel boring machines, in colours that reflect the geology under the Thames, such as chalk – laid down over 100 million years ago – flint and fossils.

All 2,000 commemorative cups were given out to the teams when the excavation of their particular section of the tunnel was completed.

A lasting legacy

Art associated with the actions of building a sewer may seem unusual. But there's a rationale, and a deeper significance, which is tied to this commitment.





Original cups were created from rock samples excavated during tunnel construction

Tideway is in effect a pop-up that will come and go. The permanent installations leave a legacy that will change in small parts the face of London.

For the workforce, the rock cups go beyond a personal memento, to make invisible work visible.

We know that three generations on, descendants of those who worked on the Victorian sewer are still proud – and that seems likely for the next generation too; our interviewees tended to agree they would take their grandchildren to visit.

It is more of a leap for Thames Water to maintain a cultural offer, than say, Transport for London (TfL) with its Transport Museum.

It would be great to see Tideway's public art growing into a celebration of Old Father Thames, building on the distributed artwork that are the Rock Cups, with an art trail, a digital app, or Blue Badge storytellers, to bond Londoners from east to west.

"Part sculpture, part performance and part functioning cup, this art commission tells the story of the tunnel being built under our feet. It will invite the owner to stop and take tea, it will stand as a symbol of the poetry of civic engineering and it is a rather special thank you gift."

Heather Peak



The cup artworks were used to thank those who contributed to building the tunnel

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