



An Roinn Iompair
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport

ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2018

Lyrath Estate Hotel, Kilkenny, May 2018.

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2018

Public Lighting

Brian Bourke

A/Senior Executive Engineer
Road Management Office



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Project Drivers

1

2020 Energy
Efficiency
Targets

2

SOX lights
phase out

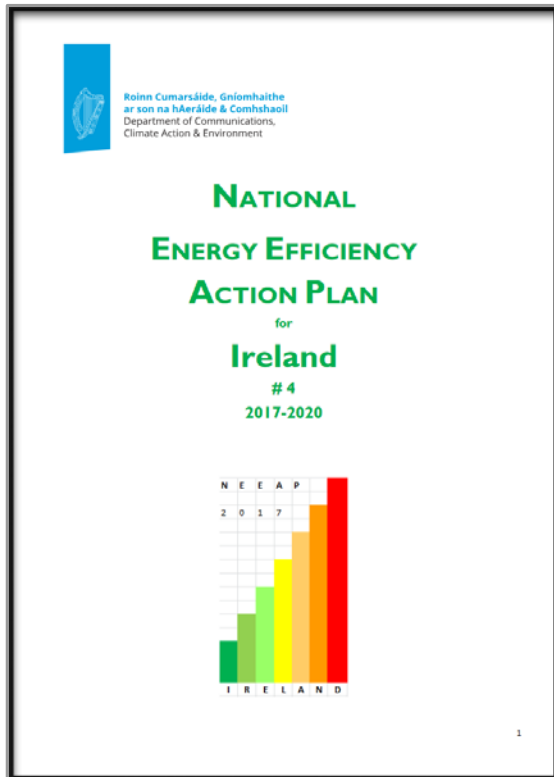
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Cost
Savings
(Energy &
Maintenance)

Non-Energy Related Benefits

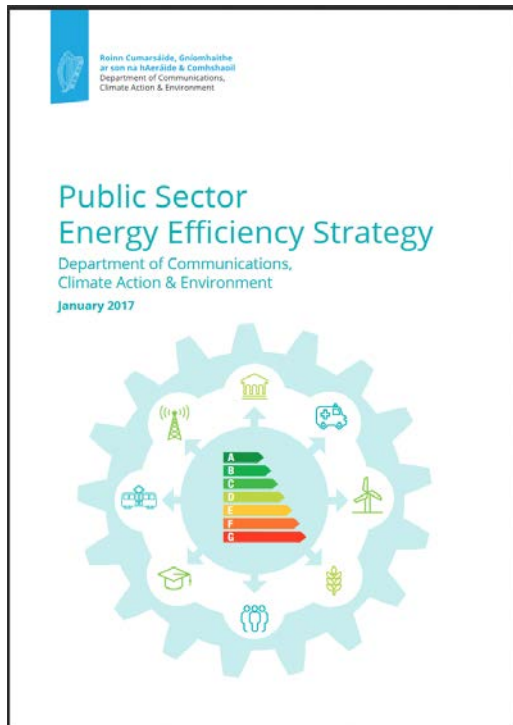
- It reduces the number and severity of night time road accidents
- It increases evening activity and promotes the evening economy
- Provides a safer environment
- Reduces carbon emissions
- Reduces Maintenance Costs (LED have a lifetime of 100,000 hours or 20 years)
- Compatible with Trimming and Dimming burn profiles
- Reduces street crime and fear of crime
- Assists the emergency services and Gardaí (CCTV)

Local Authority Public Lighting



- 489,000 Public lights in Ireland, 240,000,000 kWh energy (45,000 average homes annual energy use)
- 9% are LED – circa. 40,000 - €20m
- Public Lighting accounts for circa. 50% of Local Authority Energy use. Public sector to be 33% more energy efficient by 2020
- *“Public Lighting is one of a range of measures that are important to achieve Ireland’s energy efficiency objectives in the Public Sector.”*
- *“local authorities are co-operating and working on a co-ordinated basis through a National Steering Group whose objective is the upgrade of the public lighting stock to achieve the national public sector energy efficiency target.”*

Public Sector Response



“The completion of this flagship national project is critical if the Local Authority sector is to meet its part of the public sector target in 2020”

Background of RMO Public Lighting

- ❑ Public Lighting Steering Group Set up 2015 – participants on next slide
- ❑ Primary Aim was to look at options for assisting Public Lighting Sector / Local Authorities reach 2020 targets
- ❑ RMO PL Team was established as dedicated resource to develop Business Plan
- ❑ RMO Team Leader Daragh Quill in place since 2016 followed by Team Members Brian Ahern & Brian Bourke in 2017
- ❑ LUTS Sub Committee / CCMA
- ❑ Completing Business Case was the principle priority in 2017



Roinn Cumarsáide, Gníomhaithe
ar son na hAeráide & Comhshaoil
Department of Communications,
Climate Action & Environment



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Department of Transport,
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The National Public Lighting Steering Group

- **Michael Walsh (Chair) -
Waterford City & County
Council**
- **Marcus O'Connor – Tipperary
County Council**
- **Eddie Taaffe – Wexford
County Council**
- **Tim Butler - Kilkenny County
Council**
- **Tom Stritch – Cork County
Council**
- **John McCarthy – DTTAS**
- **Albert Jordan – DCCAE**
- **Rebecca Minch – DCENR**
- **Geraldine Walsh – TII**
- **Kevin O'Rourke – TII**
- **Anne Mac Dermott – TII**
- **Peter Burke – LGMA**
- **Kevin O'Sullivan – ARUP**
- **Alan Ryan – SEAI**
- **Majella Kelleher – SEAI**

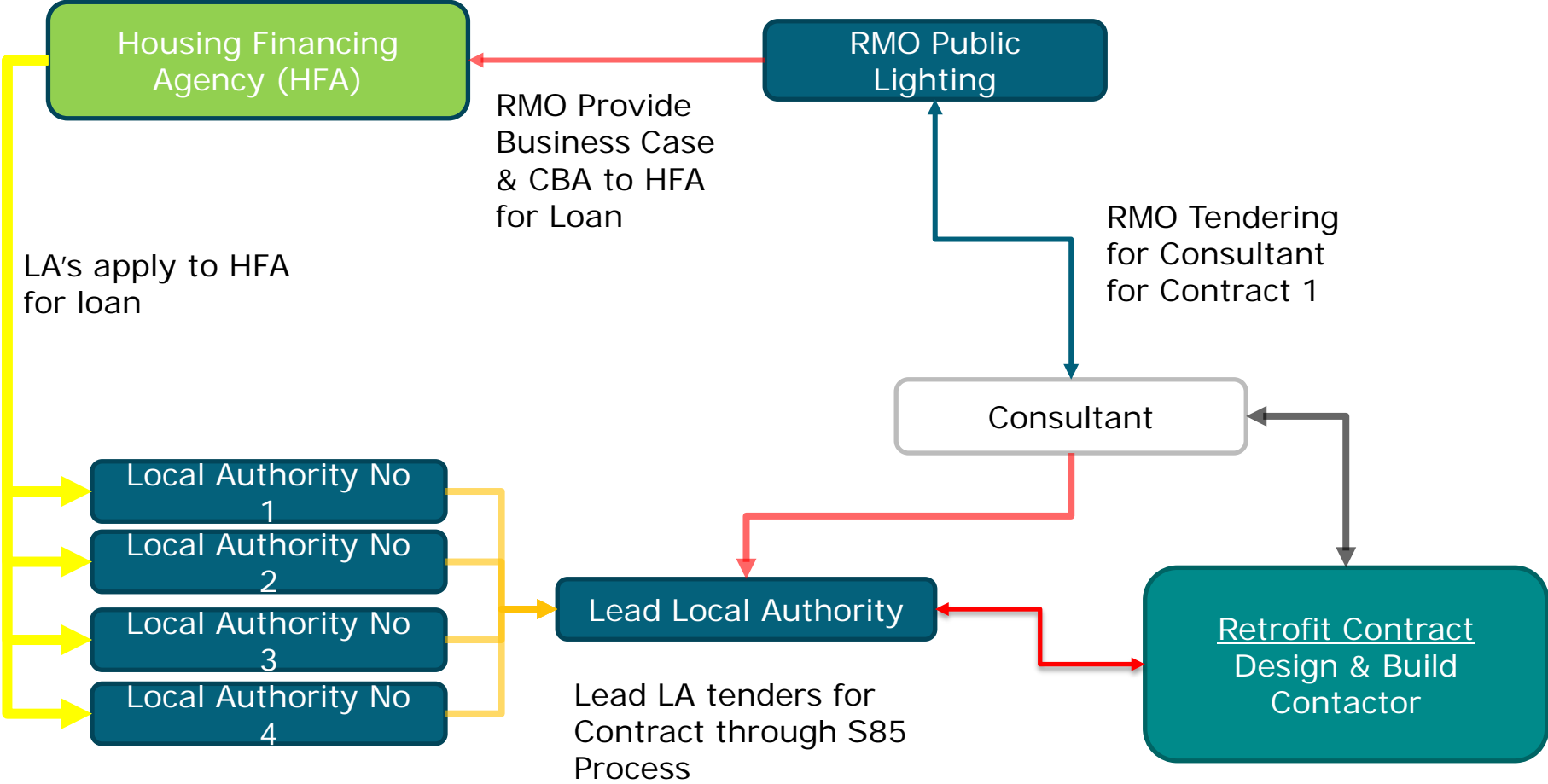
The Technical Working Group

- **Darragh Quill Public Lighting RMO**
- **Brian Bourke Public Lighting RMO**
- **Brian Ahern Public Lighting RMO**
- **Kevin O'Sullivan ARUP**
- **Chris Corr ARUP**
- **Mark Reilly ARUP**
- **Susan Cogan MCO**
- **Geraldine Walsh TII**
- **Anne MacDermott TII**
- **Farham Naseim Laois Co. Co.**
- **Maura Gilchrist Longford Co. Co.**
- **Willie Ryan Offaly Co. Co.**
- **Grainne Mowlds South Dublin Co. Co.**
- **Aidan Mahony Cork City Council**
- **Brendan Fitzsimons Westmeath Co. Co.**
- **Alan Hall Monaghan Co. Co.**
- **Declan Keogh Carlow Kilkenny Energy Agency**
- **Paddy Phelan Carlow Kilkenny Energy Agency**
- **Triona Casey Midlands Energy Agency**
- **Alan Ryan SEAI**
- **Richard Morton SEAI**

Contract Options being Investigated

- ❑ **Energy Performance Contracts (EPC/ESCO)** More expensive & LA's to hand over economic ownership of PL to ESCO for 15 years +
- ❑ **Procure Lights directly on a framework** At least 10% more expensive due to VAT rules
- ❑ **Traditional client designed project** extremely complex scheduling of designs with contractor, also possibly more expensive re: consultants
- ❑ **Maintenance Contractors put up LED's** (procurement issues with existing maintenance contactors, less economies of scale, take longer)
- ❑ **Design & Build (Design / Build / Maintain??)** Design Approval Protocol to be agreed.
- ❑ **Design & Build & Condition Rate**

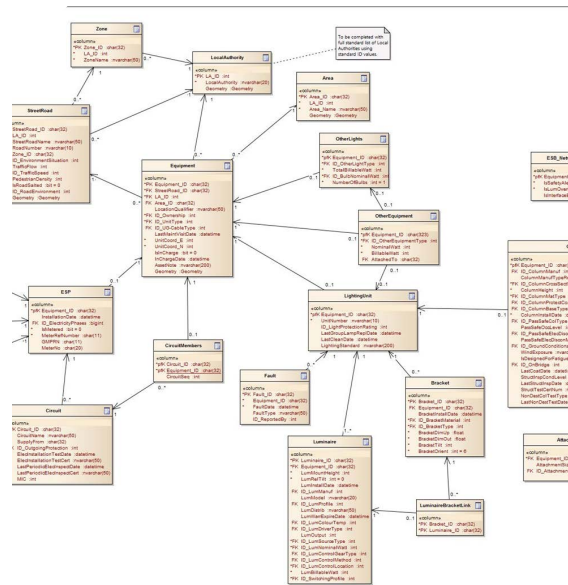
Proposed Implementation Model



Funding for Consultancy Work

- *ELENA is a joint initiative by the EIB and the European Commission under the Horizon 2020 programme. Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020)*
- *ELENA supports programmes above EUR 30 million with a 3-year implementation period for energy efficiency*
- *Covers up to 90% of technical assistance / project development costs*
- *The funding is a non-repayable grant and the RMO Public Lighting Team are applying for project assistance funding via the ELENA Fund*

Data Management & Condition Rate



- Standardisation of Public Lighting data – update your data to RMO Specification (coming soon)
- Matching your PL database to the UMR – Critical in order to achieve the savings
- Specification and Standards for Project: Please attend and engage with Technical Workshops
- Project will condition rate the asset as per agreed methodology
- % of LA Columns that need replacement is unknown. LA's survey responded as follows:

1 @ 30%,

1 @ 20%,

1 @ 11%,

the rest @ <5%

Progress so far

- Business Case / Cost Benefit Analysis completed and peer review process is ongoing
- Economic Assessment strongly positive
 - IRR 13.1%, Benefit Cost Ratio 1.7
 - NPV €68m (20 years)
- Financial Appraisal shows a surplus of savings over debt service
- Total energy saving of 200 GWh TPER & 43,000 tonnes CO₂ per year
- RMO currently engaging one-to-one with Local Authorities

Peer Review Process commenced on March 21st 2018

- Chaired by Moira Murrell Chief Executive Kerry County Council

- Comments from review in relation to:
 - Infrastructure Upgrades
 - Cost Benefit Analysis to address a few more options e.g. do minimum scenario, infill / replacement columns
 - Effects of the project on existing maintenance contractors
 - ESB Networks issues and effect on project
 - Governance

- The peer review board will meet again shortly and the RMO PL Team are working in conjunction with the National Public Lighting Steering Group on addressing all matters raised, within the range of constraints that exist including borrowing ceilings, and hope for a positive conclusion

Overall Financial Projection for National LED Retrofit

Aggregate (€m)	
Light replacement costs	(165.7)
Procurement costs	(7.7)
Total upfront capital cost	(173.5)
Driver replacement costs (year 13)	(18.5)
Total capital cost	(192.0)
Debt funding	173.5
Interest cost @ 1.1%	15.6
Energy cost savings	257.9
Maintenance cost savings	115.2
Net decrease in expenditure (after debt service costs)	165.4

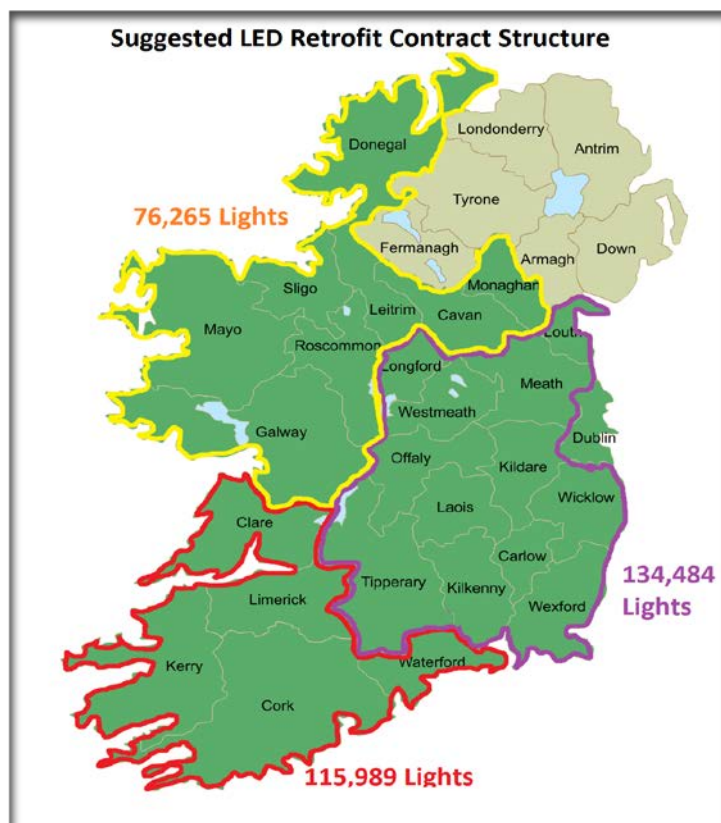
- This is the actual cost to Local Authorities.
- Based on the 20 Year project horizon

Estimated Cost per Local Authority

County by County (€m)	Upfront capital cost	Driver replacement cost (Yr 13)	Debt funding	Interest cost @ 1.1%	Energy cost savings	Maintenance cost savings	Net surplus of savings over debt service costs
Carlow	(3.5)	(0.4)	(3.5)	(0.3)	5.4	2.4	3.5
Cavan	(3.5)	(0.4)	(3.5)	(0.3)	6.0	2.2	4.0
Clare	(6.9)	(0.8)	(6.9)	(0.6)	10.0	4.6	6.3
Cork	(21.4)	(2.3)	(21.4)	(1.9)	28.9	14.4	17.6
CorkCity	(8.1)	(0.8)	(8.1)	(0.7)	12.1	4.8	7.3
Donegal	(8.1)	(0.9)	(8.1)	(0.7)	11.4	5.5	7.2
GalwayCity	(4.1)	(0.5)	(4.1)	(0.4)	6.4	2.9	4.3
Galway	(5.5)	(0.6)	(5.5)	(0.5)	7.7	3.6	4.8
Kerry	(7.6)	(0.8)	(7.6)	(0.7)	9.9	4.9	5.7
Kildare	(9.3)	(1.0)	(9.3)	(0.8)	13.9	6.4	9.2
Kilkenny	(4.7)	(0.5)	(4.7)	(0.4)	7.1	3.1	4.7
Laois	(4.5)	(0.5)	(4.5)	(0.4)	6.7	2.9	4.2
Leitrim	(1.9)	(0.2)	(1.9)	(0.2)	3.0	1.3	2.0
LimerickFM	(10.7)	(1.1)	(10.7)	(1.0)	16.8	6.9	10.9
Longford	(2.2)	(0.2)	(2.2)	(0.2)	3.1	1.5	2.0
Louth	(7.2)	(0.8)	(7.2)	(0.6)	11.9	4.7	8.0
Mayo	(7.3)	(0.8)	(7.3)	(0.7)	11.3	5.1	7.6
Meath	(8.5)	(1.0)	(8.5)	(0.8)	13.7	6.0	9.5
Monaghan	(2.8)	(0.3)	(2.8)	(0.3)	4.7	1.8	3.2
Offaly	(3.8)	(0.4)	(3.8)	(0.3)	5.3	2.5	3.3
Roscommon	(3.2)	(0.3)	(3.2)	(0.3)	4.7	2.1	3.1
Sligo	(4.0)	(0.4)	(4.0)	(0.4)	6.7	2.6	4.5
Tipperary	(8.2)	(0.8)	(8.2)	(0.7)	12.3	5.3	7.8
Waterford	(7.3)	(0.8)	(7.3)	(0.7)	11.1	4.8	7.3
Westmeath	(5.0)	(0.6)	(5.0)	(0.5)	7.3	3.5	4.8
Wexford	(6.4)	(0.7)	(6.4)	(0.6)	9.2	4.4	5.9
Wicklow	(7.7)	(0.8)	(7.7)	(0.7)	11.1	5.1	7.0
Total	(173.5)	(18.5)	(173.5)	(15.6)	257.9	115.2	165.4

* Includes TII Lights

Next Steps.....



- ❑ Tendering for Consultant for Project Specifications, Contract Documents
- ❑ Local Authorities will need to reach consensus on all issues through workshops facilitated by the RMO during 2018.
- ❑ Section 85 Process
- ❑ Development of National Public Lighting Database for tender process
- ❑ Finalise funding details
- ❑ Technical Issues with ESBN & UMR

Advantages of Utilising the RMO Delivery Model for LA's

- Achieve your Energy Efficiency Targets!
- Economies of scale of a 100,000+ LED project
- Business Case and Cost Benefit Analysis Completed
- Tendering and Procurement done
- Design and Build Project
- Consultant Resources - Audit and Check Designs
- HFA Loan Facility at a very competitive rate
- Energy and Maintenance Cost Savings
- Asset Condition survey completed to allow Public Lighting Management to progress to an efficient and effective asset management regime

RMO Public Lighting Team

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Thank you for your kind attention