

Update of the Development of On and Off-Road Mobile Source Control Strategies

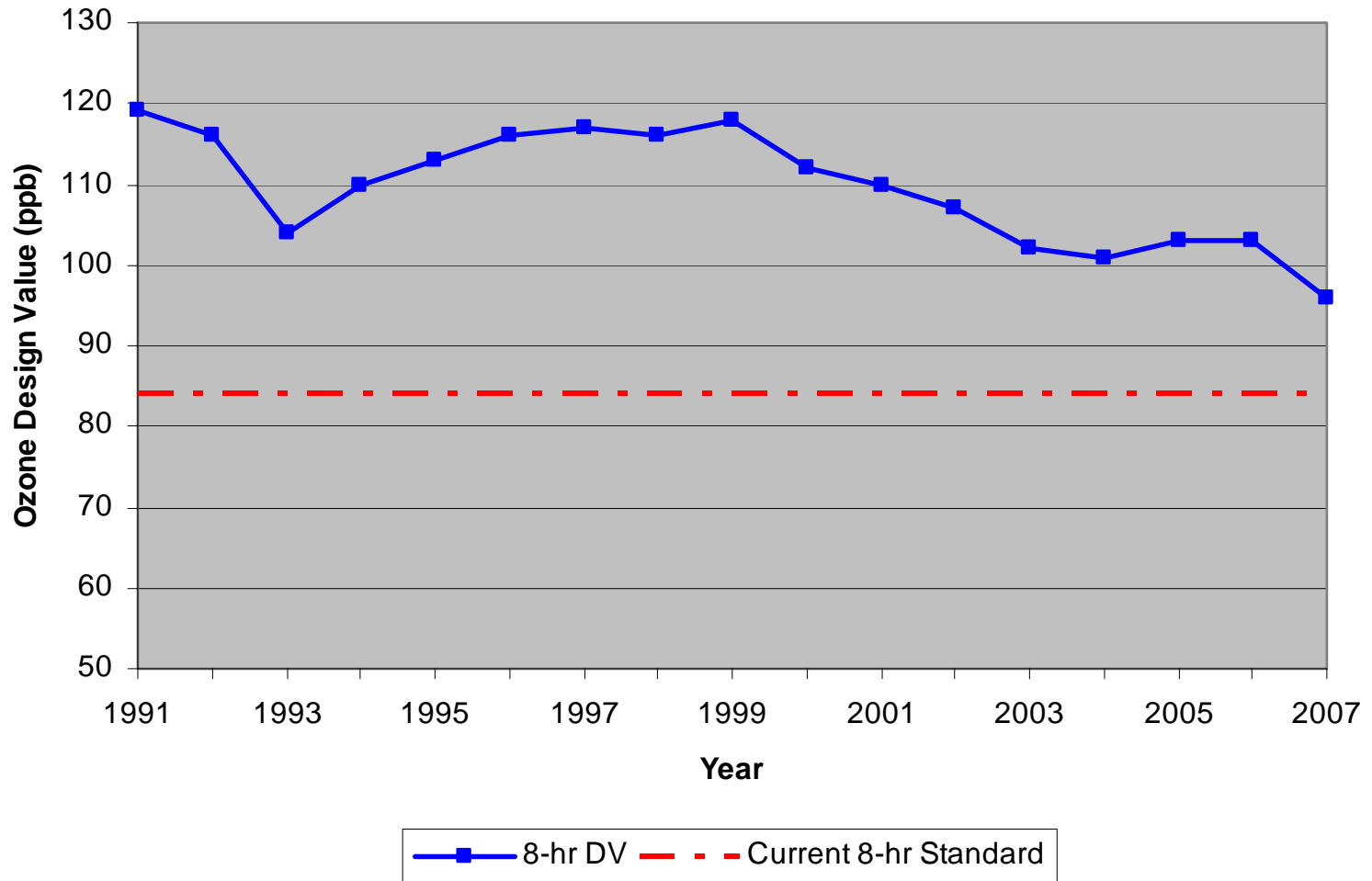
Shelley Whitworth
Houston-Galveston Area Council



Ozone Related Health Effects

- Difficult in breathing, shortness of breath.
- Aggravated/prolonged coughing and chest pain.
- Increased aggravation of asthma.
- Increased hospital admissions and emergency room visits.
- Premature aging of the lungs
- Illness such as bronchitis and emphysema.
- Growing evidence suggests association with premature death.

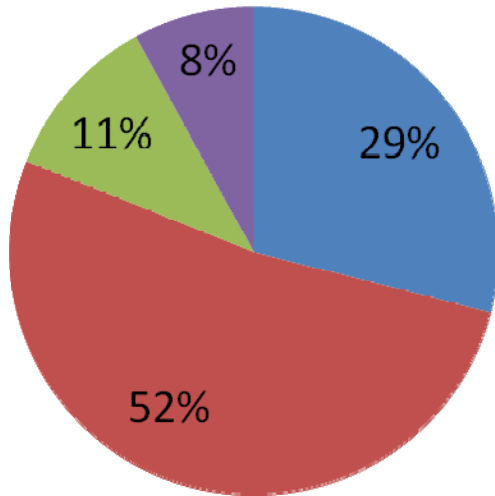
Houston-Galveston-Brazoria region 8-Hour ozone design value trends



VOC Emissions in the HGB 8-County Non-Attainment Region

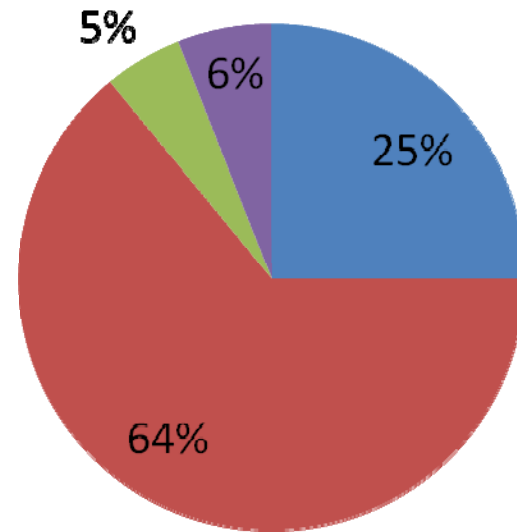
Source: TCEQ Initial 2018 HGB Modeling Emissions Inventory

2005 VOC Baseline Emissions



Total = 992 tons per day

2018 VOC Future Modeling Emissions



Total = 1011 tons per day

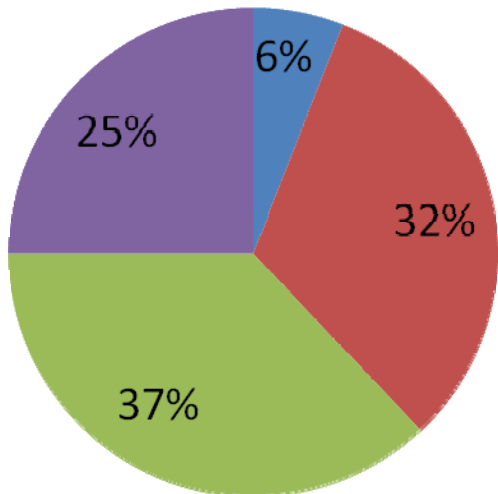
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NOx Emissions in the HGB 8-County Non-Attainment Region

Source: TCEQ Initial 2018 HGB Modeling Emissions Inventory

2005 NOx Emissions Baseline

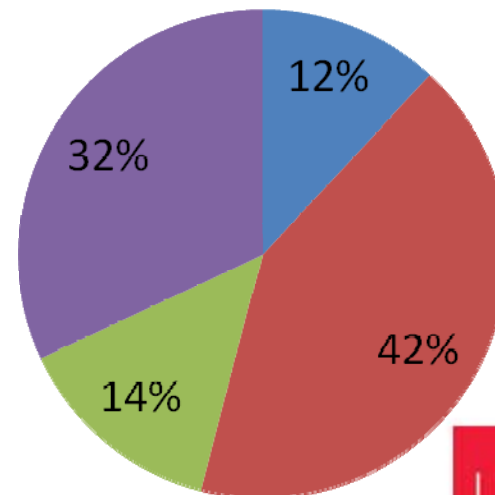
■ Area ■ Point
■ On-Road ■ Non-Road



Total = 600 tons per day

2018 Future Modeling Emissions

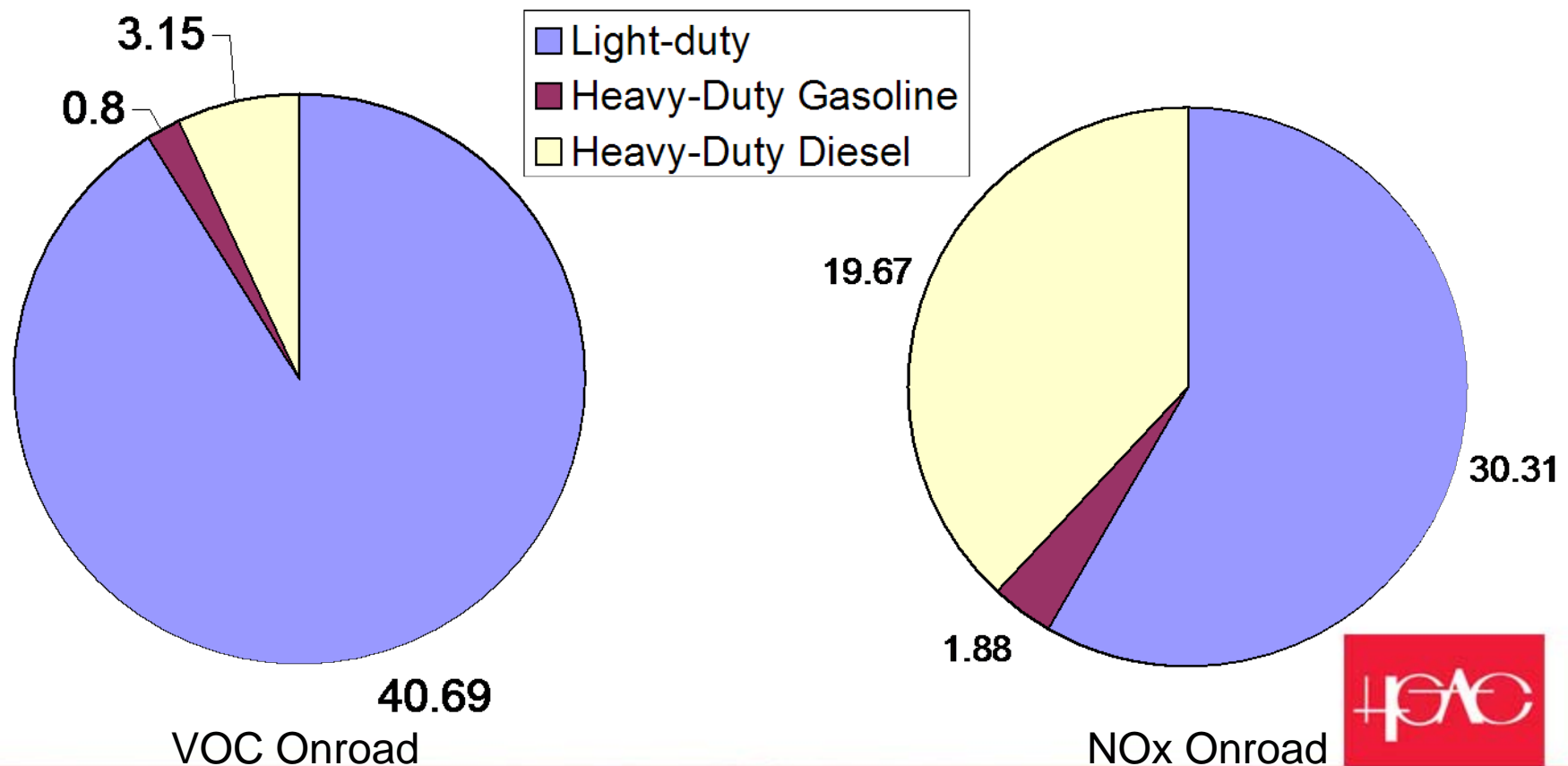
■ Area ■ Point
■ On-Road ■ Non-Road



Total = 364 tons per day

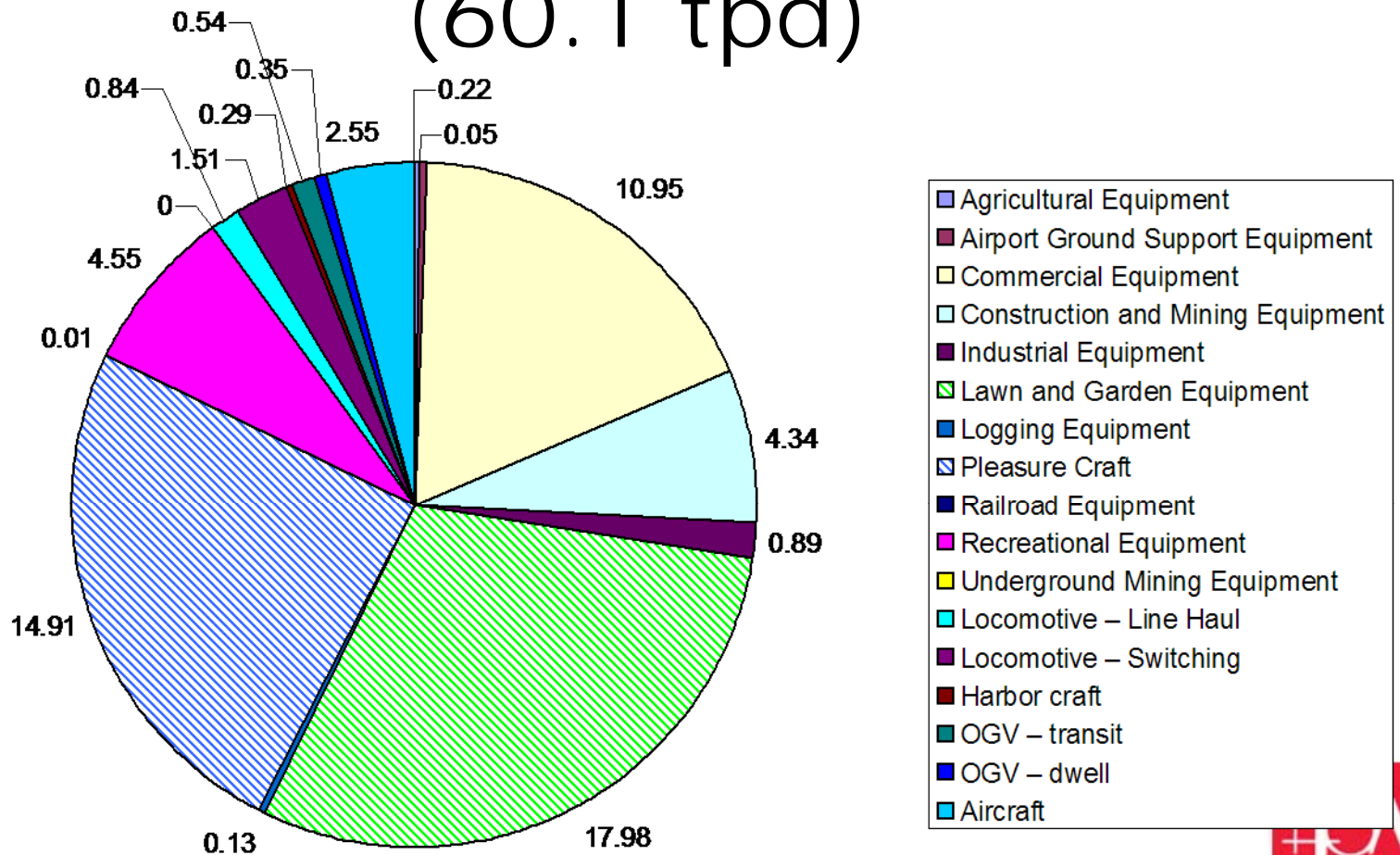
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HGB 2018 Baseline Onroad VOC and NO_x Inventory (44.6 tpd VOC and 51.7 tpd NO_x)



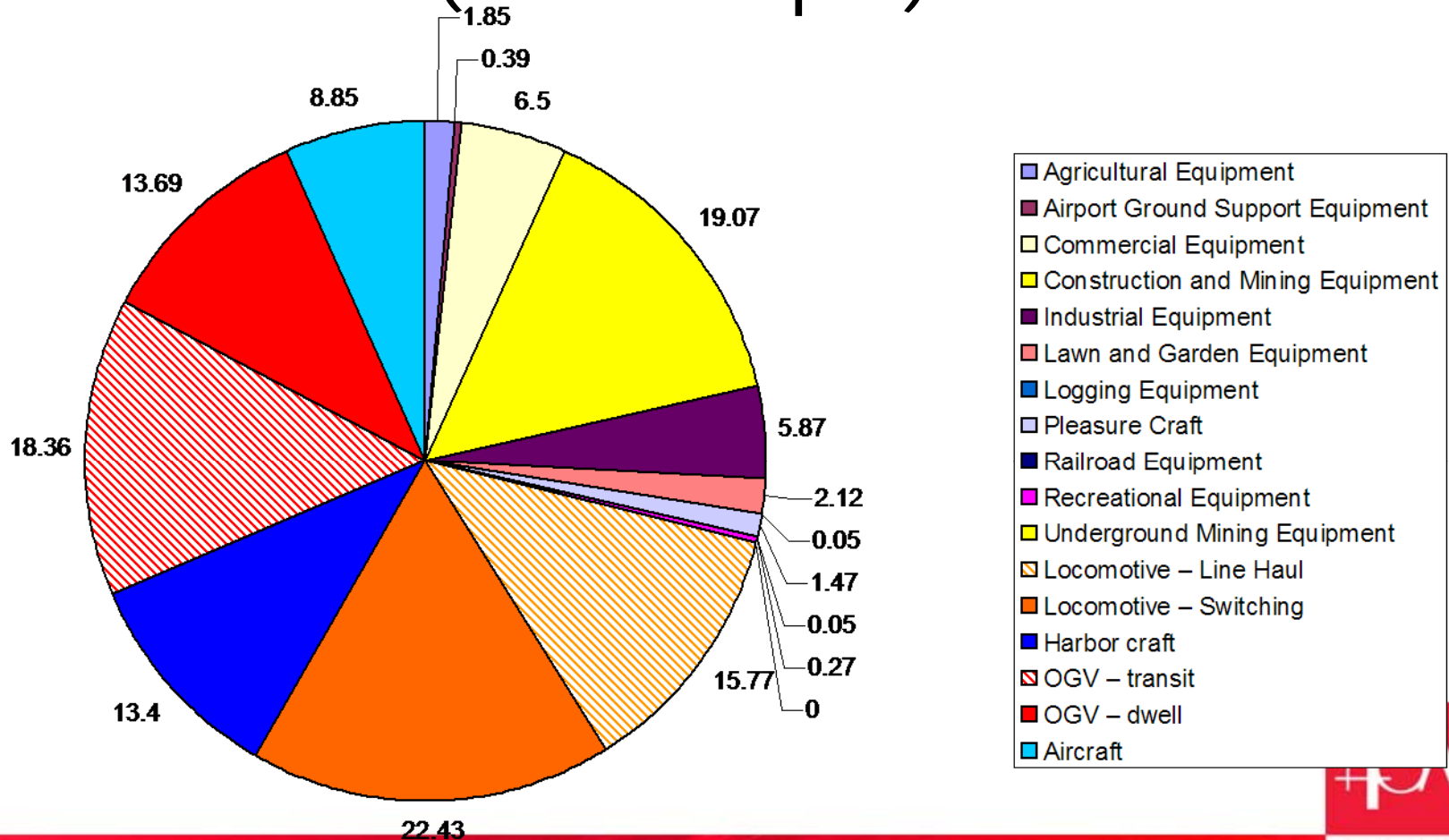
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HGB 2018 Baseline Offroad VOC Inventory (60.1 tpd)



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HGB 2018 Baseline Offroad NOx Inventory (128.4 tpd)



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On-road Control Strategies

- **Local Government Commitments**
 - Commute Solutions
 - Idling Limitations
 - Transit
 - Increase vehicle turnover
 - Preferential parking for High Occupancy Vehicle (HOV)
 - Computerized traffic signal systems
 - Pay-As-You-Drive Insurance

On-Road Control Strategies

- **State Government Commitments**

- Distribute cleaner diesel fuel
- Strengthen and expand state-run programs
- Remove fuel subsidies
- Alter gasoline taxes

- **Federal Government Commitments**

- Heavy-Duty Vehicle Border Inspection Program for AB 1009 (Pavley 2004)

- **Business Commitments**

- Employee parking cash-out program
- Mandatory or voluntary compressed work week
- Industry idling restrictions

Non-Road Control Strategies

- Enhance and extend TERP Program
- Government construction incentives
- Limitations on idling
- Efficiency improvements on rail equipment
- Increase fleet turnover for all older engines
- Expand use of cleaner fuels to marine vessels
- Port of Houston Clean Air Action Plan to minimize emissions from ships, cargo equipment, on-road trucks and port related rail

Information

- Subcontractor: ENVIRON
- Documentation:

<http://www.h-gac.com/taq/airquality/sip>

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