Waterwegen en Zeekanaal NV
weg van water

De Vlaamse Waterweg nv

Waterwegen en Zeekanaal NV
wordt op 1/1/2018
De Vlaamse Waterweg nv

Dré Maes

Bilateral water allocation agreements in the Meuse and Scheldt basins

Water allocation in transboundary basins: a global workshop on the status and good practices
Geneva 16-17 October 2017

Flanders inland water ways

Ghent-Terneuzen canal treaty

Meuse treaty

The Meuse treaty

°1995

Occasion: Drought → Economical equality, ecosystem Grensmaas

The Meuse treaty

- NL-supply of min. 8 m³/s to the Campine canals (BE)
- BE discharges max. 10 m³/s to Zuid-Willemsvaart (NL)
- equal water consumption (FL/NL) during dry conditions
- Joint modelling
- Maintaining a necessary ecological flow on the Border Meuse

Undevided discharge [m3/s]	Grensmaas [m3/s]	VL/NL use [m3/s]
130	60	35
115	55	30
100	50	25
90	40	25
80	30	25
70	20	25
60	10	25
50	10	20
40	10	15
30	10	10
25	8,3	8,3
20	6,7	6,7

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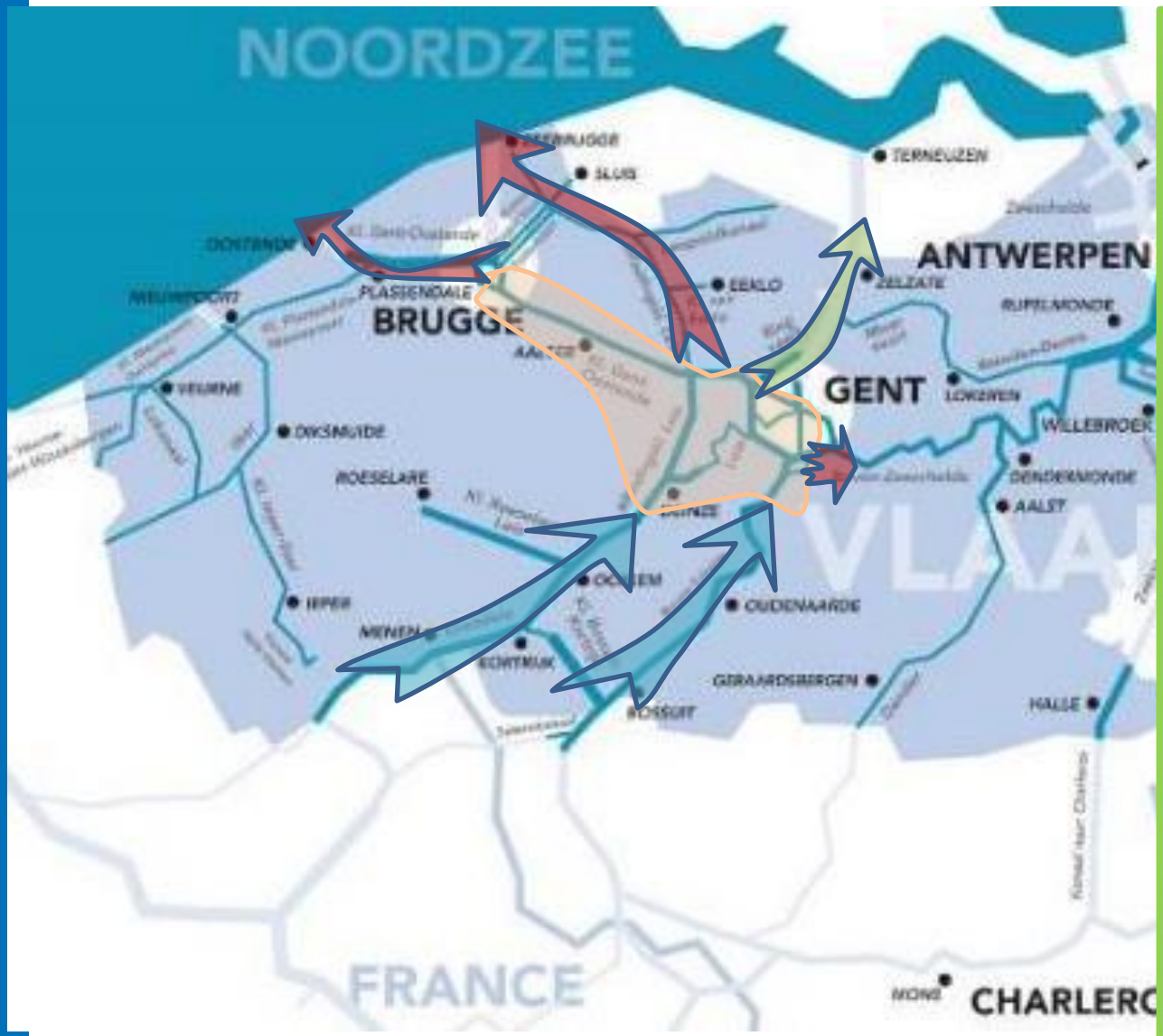
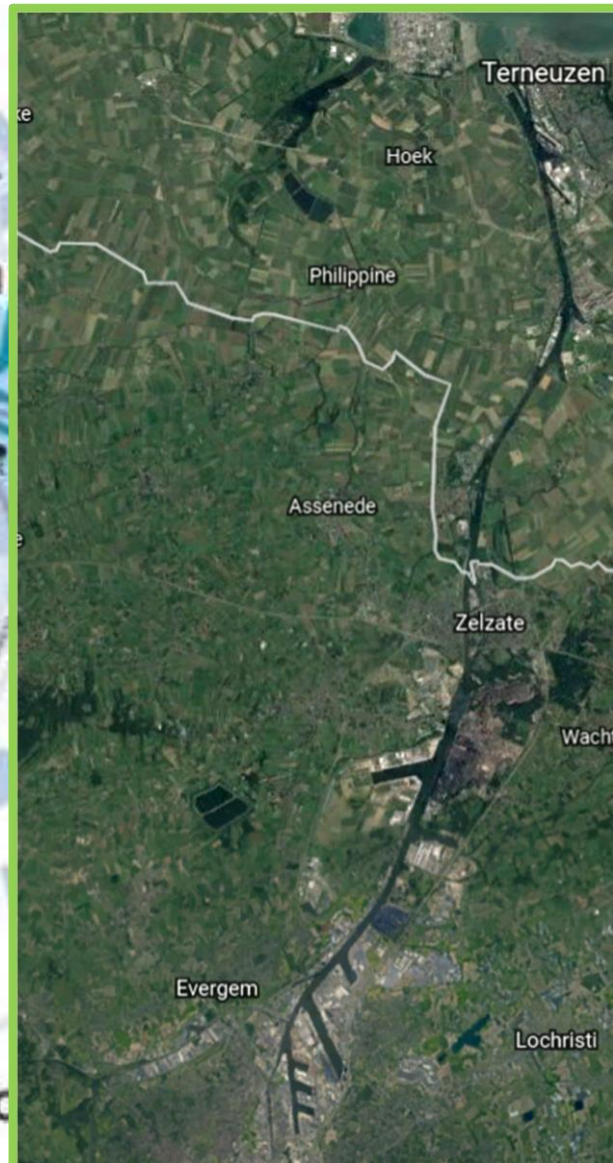
Scheldt water system

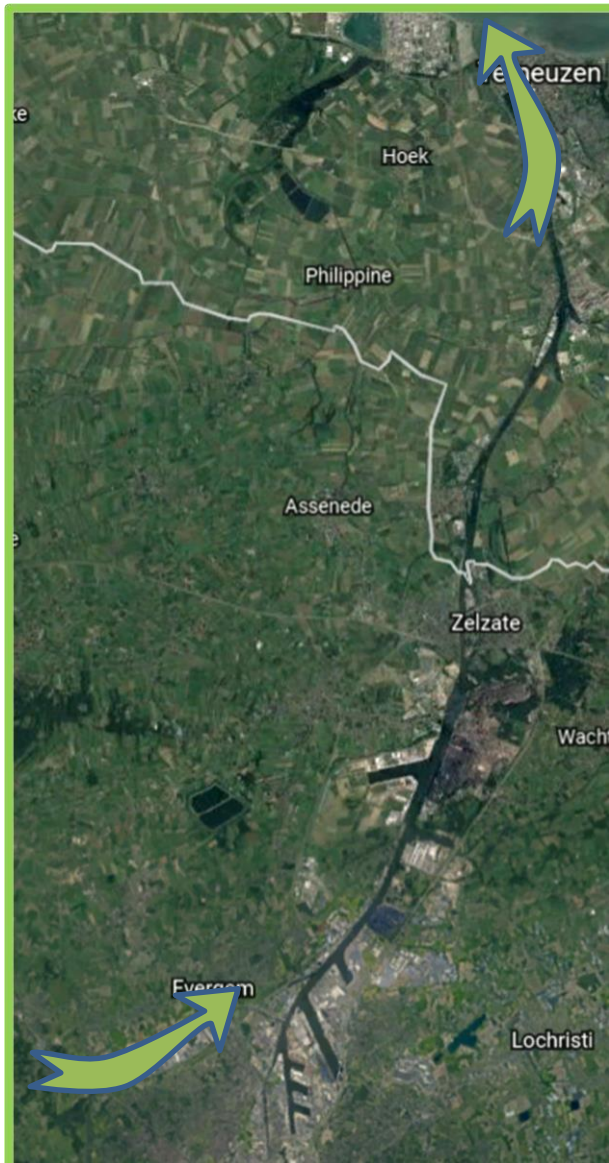




Supply and discharge

Lock complex Terneuzen

Weir Evergem



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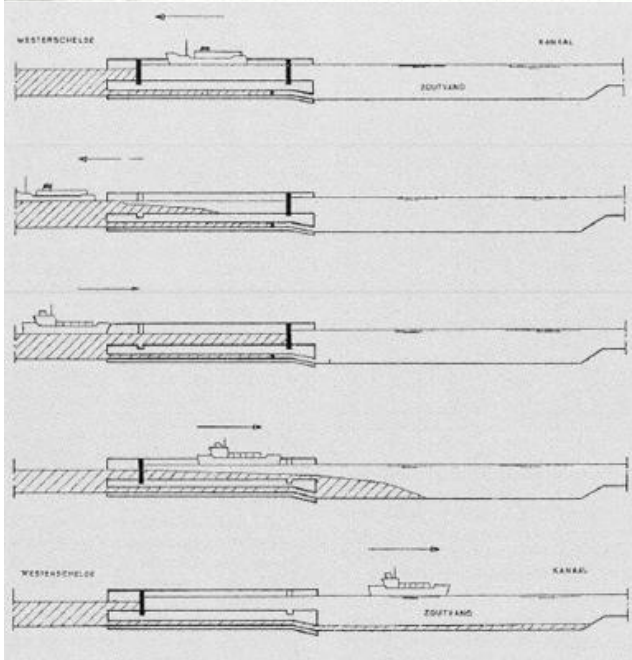
The treaty

°**1960**, revised 1985

Occasion: Upgrading the canal ⇔⇕ + building sea lock

- Canal Level – 0,25 m, + 0,25 m
  - Balance supply-discharge
- Salinity
  - Fresh water supply: two month average > 13 m^3/s
  - Salt-management lock complex Terneuzen
- Guaranteed discharge capacity of 100 m3/s at the downstream Terneuzen Locks



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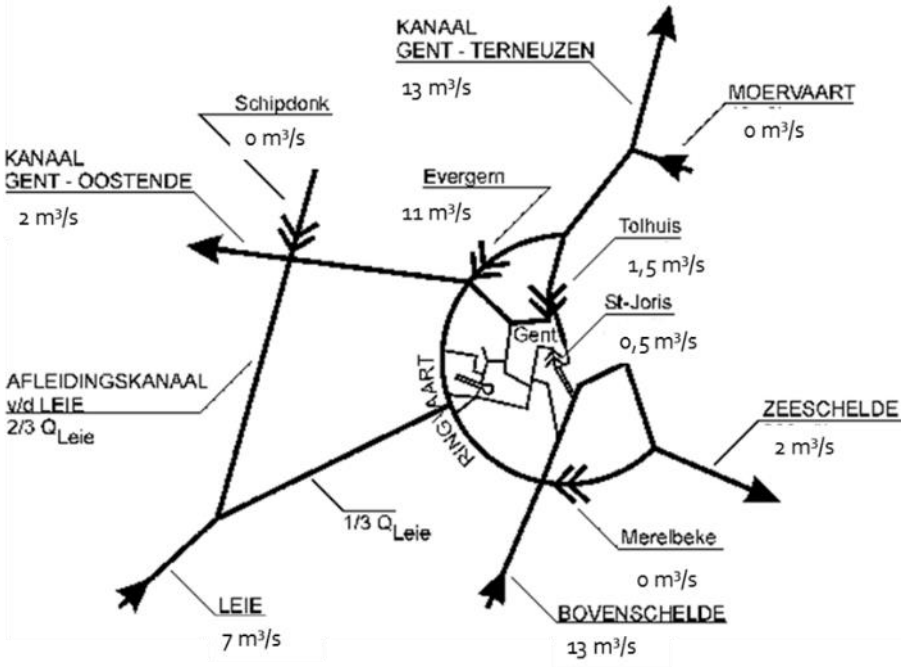
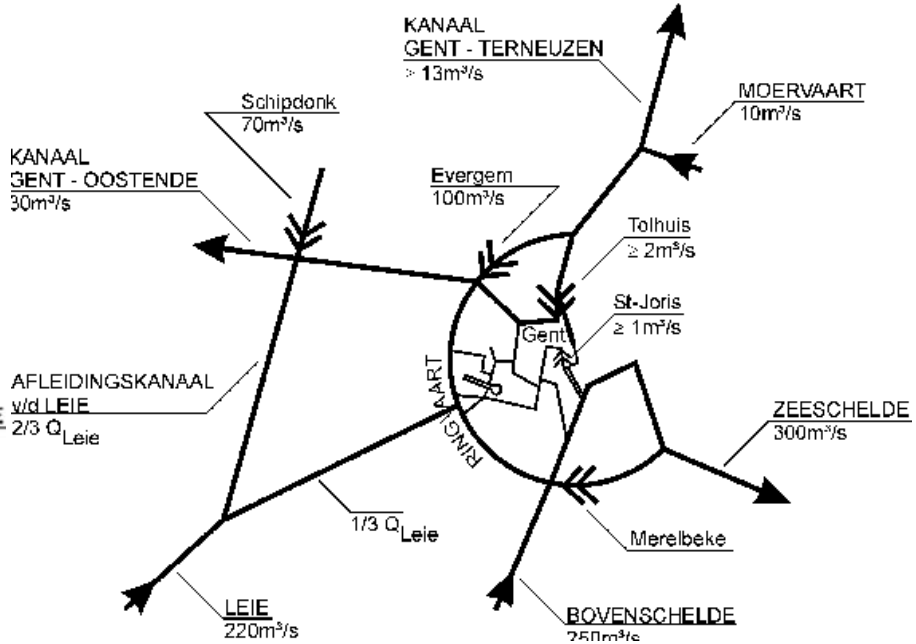
Complying with the treaty now

Dry



Wet



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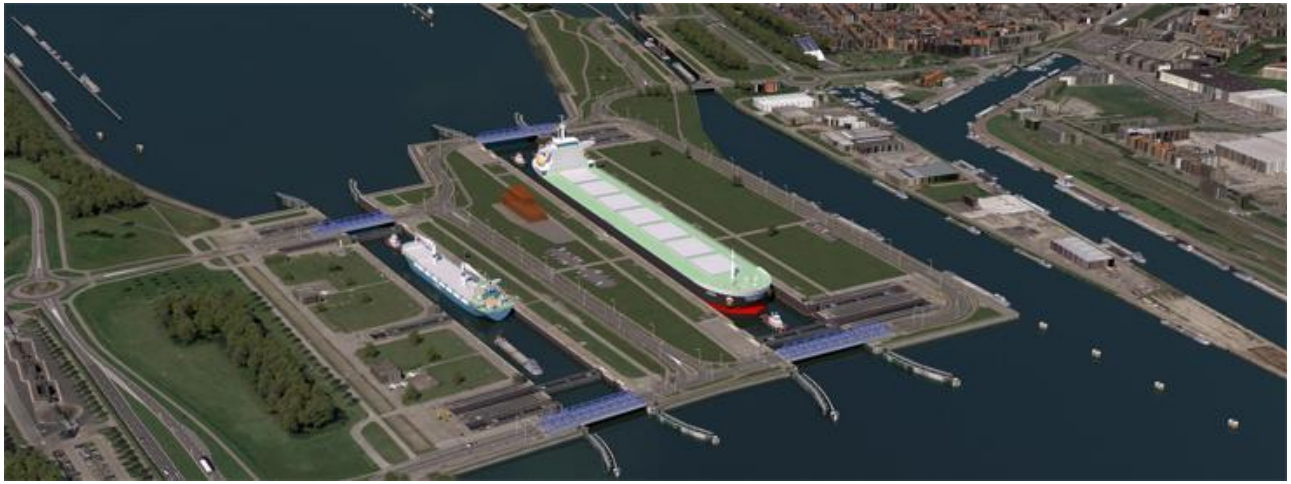
Future challenges: new lock + climate

New Lock: 427m (L) x 55 m(W) x 16 m (D)



Cimate:

- Winter discharge ↗
- Summer supply ↘
- Sealevel ↗

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with (near)future challenges

Decision Support System (DSS) for the Ghent-Terneuzen Canal

°2017

Occasion: building the new lock WFD-compliant

Goal: salinity within WFD standards, treaty compliant water management with minimal disruption for shipping

→ anticipational mitigation, management guidelines based on expert advice group

Framework: Flemish-Dutch Scheldt Commission

Method: Joint Dutch-Flemish collaboration on defining content and technical specifications of the DSS

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Decision Support System

Combining supply/discharge conditions and shipping schedules

Planning van zeeschepen in de Sluizen van Terneuzen

Schip	Lengte	Breedte	Dpg	Sluis	Planned	Volgnr.	Kant	Reis
LOENERBORG	108	18,47	4,30	W	13 14:30	1	BB	WN - G
CHEMICAL DISTRIBUTOR	124	20,60	5,20	W	13 14:30	2	BB	SB - G
[binnenvaartschip]	92	11,57	3,00	W	13 14:30			Op
[binnenvaartschip]	110	11,45	2,80	W	13 14:30			Op
JUMEIRAH BEACH	179	28,45	9,90	W	13 15:45	1	SB	G - WN
(teunis)	198	23,44	4,50	W	13 16:45			XXXXXX - T
ALDEBARAN	89	12,50	4,70	W	13 17:30			G - SB
PLUTO	175	29,40	10,05	W	13 18:15	1		SB.WR - G
PENHAR	118	13,43	4,00	W	13 19:15			G - SB
EEMS DELTA	63	11,00	4,00	W	13 19:15			G - WN
ANJA	84	12,40	6,00	M	13 20:00	1		G - SB
WILSON HORSENS	89	14,00	3,80	W	13 20:15	1		SB - G
ISIS	110	14,00	4,30	W	13 21:00	1		G - SB
WILSON BILBAO	87	12,80	5,40	W	13 21:00	1		G - WN
EEMSBORG	137	15,87	5,00	W	13 21:00			T - SB
GOLDEN ENDEAVOUR	229	32,26	12,50	W	13 22:00	1		PTNZ - G
(ovet 8)	45	21,00	2,00	W	13 23:45	1		XXXXXX - T
PRIMULA SEAWAYS	230	26,95	7,00	W	14 00:30	1		G - SB
				W	14 01:30			
LA CHESNAIS	179	30,03	7,00	W	14 02:30	1		G - WN
				W	14 03:30			

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Decision Support System

DSS input

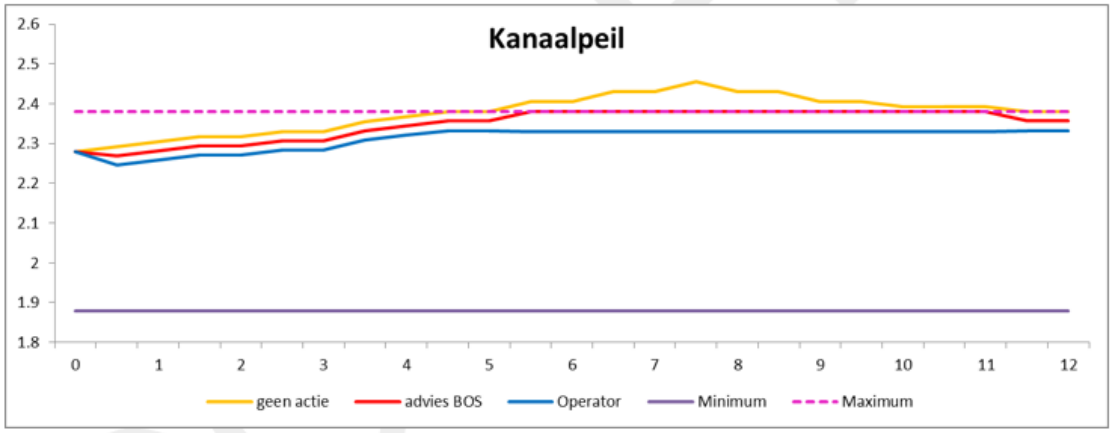
Scheduled ships, lock planning, fresh water supply, salinity, water levels,…

DSS output

Compliancy check: awareness

Lock use proposal: calculated advice and feedback

	Sluizencomplex											
	Westsluis				Nieuwe Sluis				Oostsluis			
tijd	spuicapaciteit m³/s	scheepvaart	BOS	Operator	spuicapaciteit	scheepvaart	BOS	Operator	spuicapaciteit	cheepvaar	BOS	Operator
00:00	78	b			90	z	z	z	54	b	b	b
00:30	84.5	b			97.5	z	z	z	58.5	b	b	b
01:00	91		spuien	spuien	105	b	b	b	63	b	b	b
01:30	97.5		spuien	spuien	112.5				67.5	b	b	b
02:00	97.5		spuien	spuien	112.5	z	z	z	67.5	b	b	b
02:30	104		spuien	spuien	120		spuien		72	b	b	b
03:00	104		spuien	spuien	120	b	b	b	72			spuien
03:30	117		spuien	spuien	135	b	b	b	81			spuien
04:00	123.5		spuien	spuien	142.5	z	z	z	85.5		spuien	spuien
04:30	130		spuien	spuien	150	z	z	z	90		spuien	spuien
05:00	130		spuien	spuien	150		spuien		90		spuien	spuien
05:30	143	b			165	z	z	z	99		spuien	spuien
06:00	143	b			165	b	b	b	99			spuien
06:30	156	z			180	b	b	b	108			spuien
07:00	156	bz			180	bb	bb	bb	108			spuien
07:30	169	b			195	bbb	bbb	bbb	117	b	b	b
08:00	156	z			180	b	b	b	108	b	b	b
08:30	156	b			180	z	z	z	108	b	b	b
09:00	143	z			165	z	z	z	99	b	b	b
09:30	143	z			165	b	b	b	99			
10:00	136.5		spuien	spuien	157.5	b	b	b	94.5	b	b	b
10:30	136.5		spuien	spuien	157.5	z	z	z	94.5			
11:00	136.5		spuien	spuien	157.5	z	z	z	94.5	b	b	b
11:30	130		spuien	spuien	150	z	z	z	90	b	b	b
12:00	130				150				90			



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Thank you.

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