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PRESENTS:

Alternate Approach to Rectifying Unsustainable Risk-Based Threshold Concentrations Under High Urban Background Conditions

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PRELIMINARY REMEDIATION GOAL decisions are best supported by communications focused on achievable risk reduction, rather than RISK-BASED THRESHOLD CONCENTRATIONS at urban sites.

RBTCs at Urban Sites:

Are unsustainable	Create false expectation for risk reduction	Are inconsistent with intended future site use

URBAN BACKGROUND CONSTRAINT

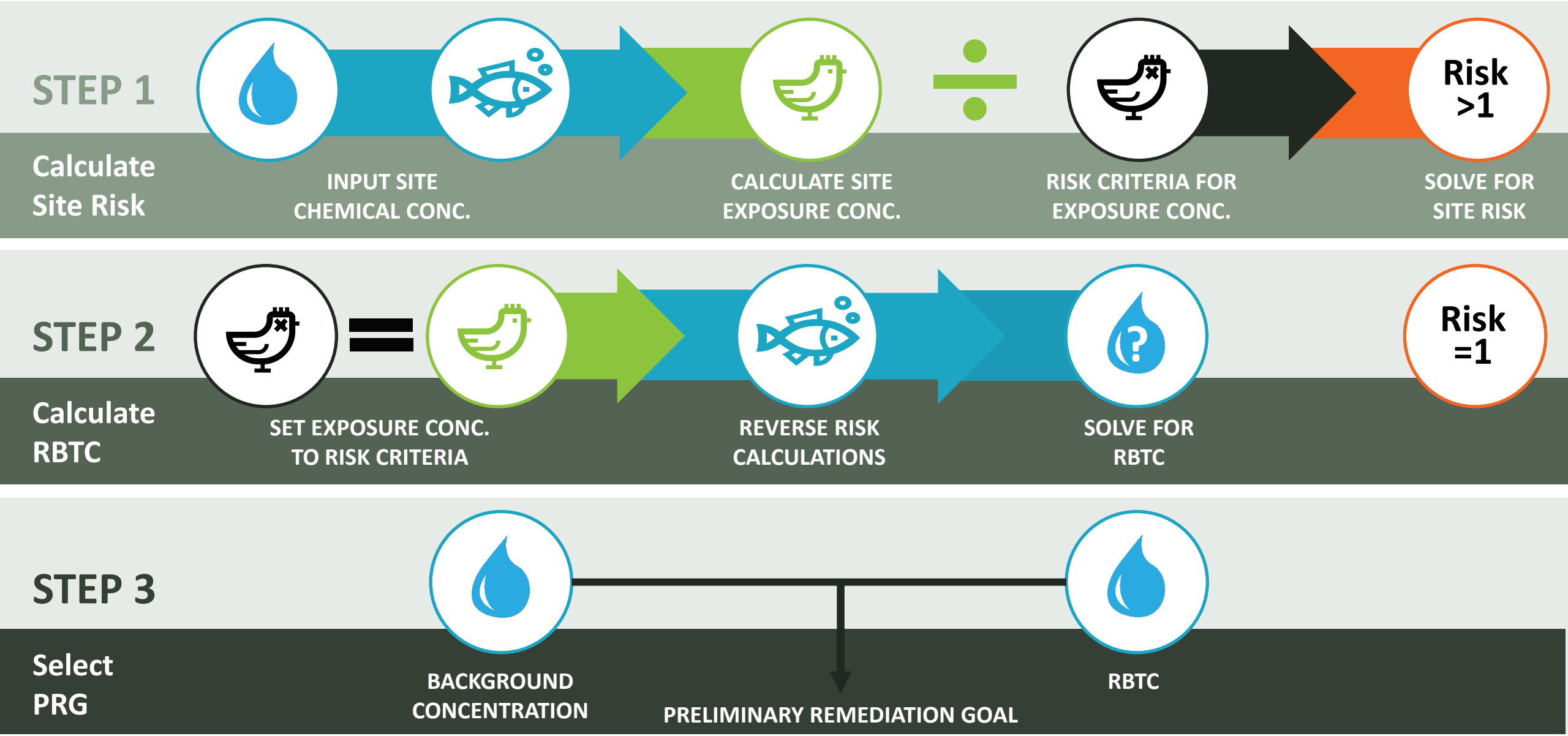
Limits ability to remediate sediment to concentrations below human and eco risk criteria

Remediation is unsustainable and sediment ultimately re-equilibrates with background concentrations

KEY TERMS

PRELIMINARY REMEDIATION GOAL	BACKGROUND CONCENTRATION	RISK BASED THRESHOLD CONCENTRATION
PRG	**Background**	**RBTC**
Initial remedial action targets, usually informed by risk Frequently a chemical concentration in media such as soil, sediment, water, or fish tissue	Chemical concentrations that are representative of surrounding ambient conditions in the absence of site-specific contamination *What concentrations would be without release*	Concentrations of contaminants in environmental media estimated to not exceed USEPA's acceptable risk targets based on appropriately conservative exposure assumptions established in the baseline risk assessments

Standard approach to support preliminary remediation goal decisions



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STANDARD APPROACH

Chemical	Receptor	Risk Path	Site Conc.	Site Risk	RBTC	Background Conc.	Background Risk
			(mg/kg sed.)	(Site exposure / exposure risk criteria)	(mg/kg sed.)	(mg/kg sed.)	(Background exposure / exposure risk criteria)
A	Mussels	Dietary exposure	800	15	53	140	3
B	Kingfisher	Dietary exposure	6	16	0.4	0.3	0.8
B	Angler	Dietary exposure	6	42	0.1	0.3	2

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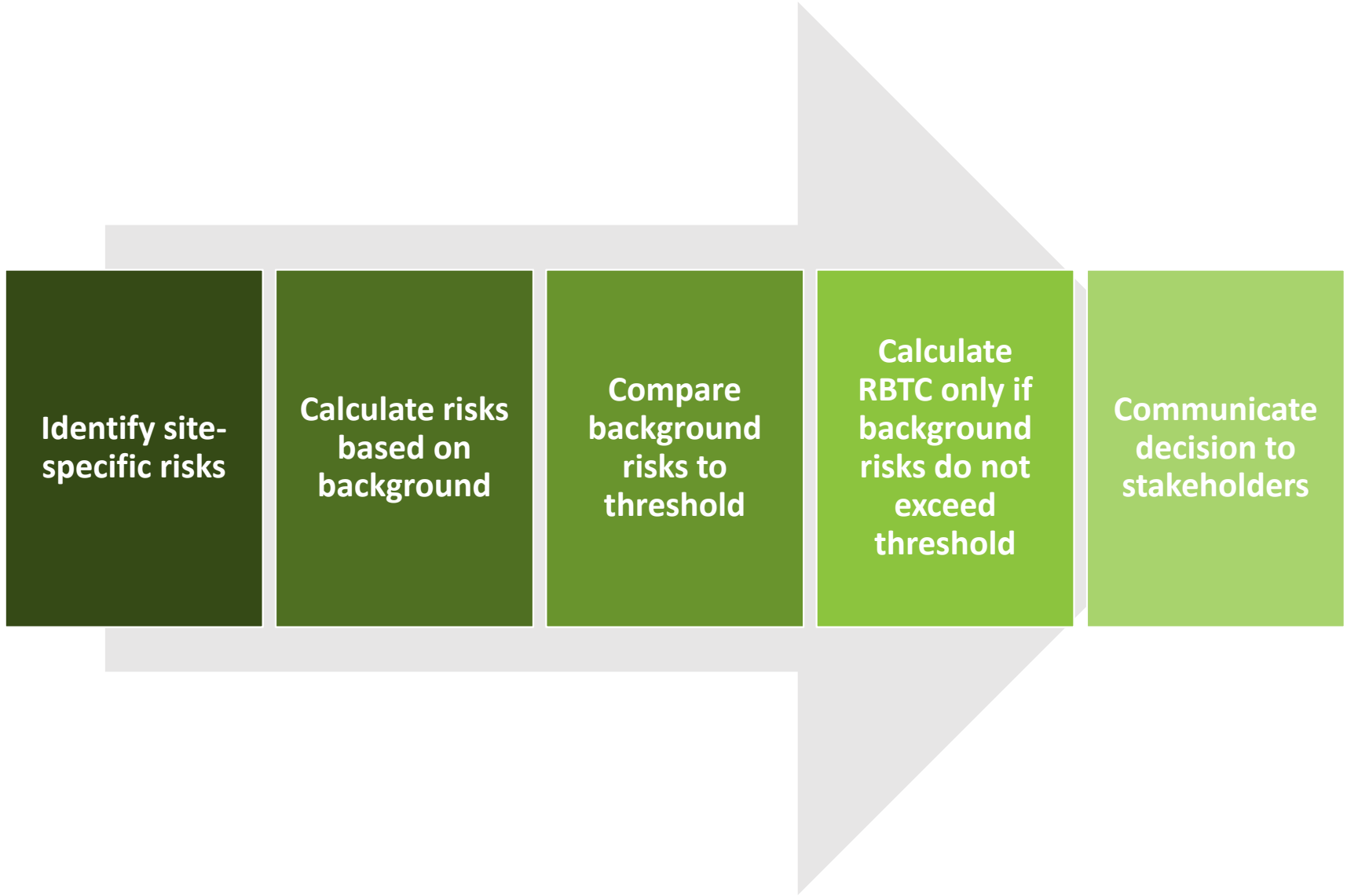
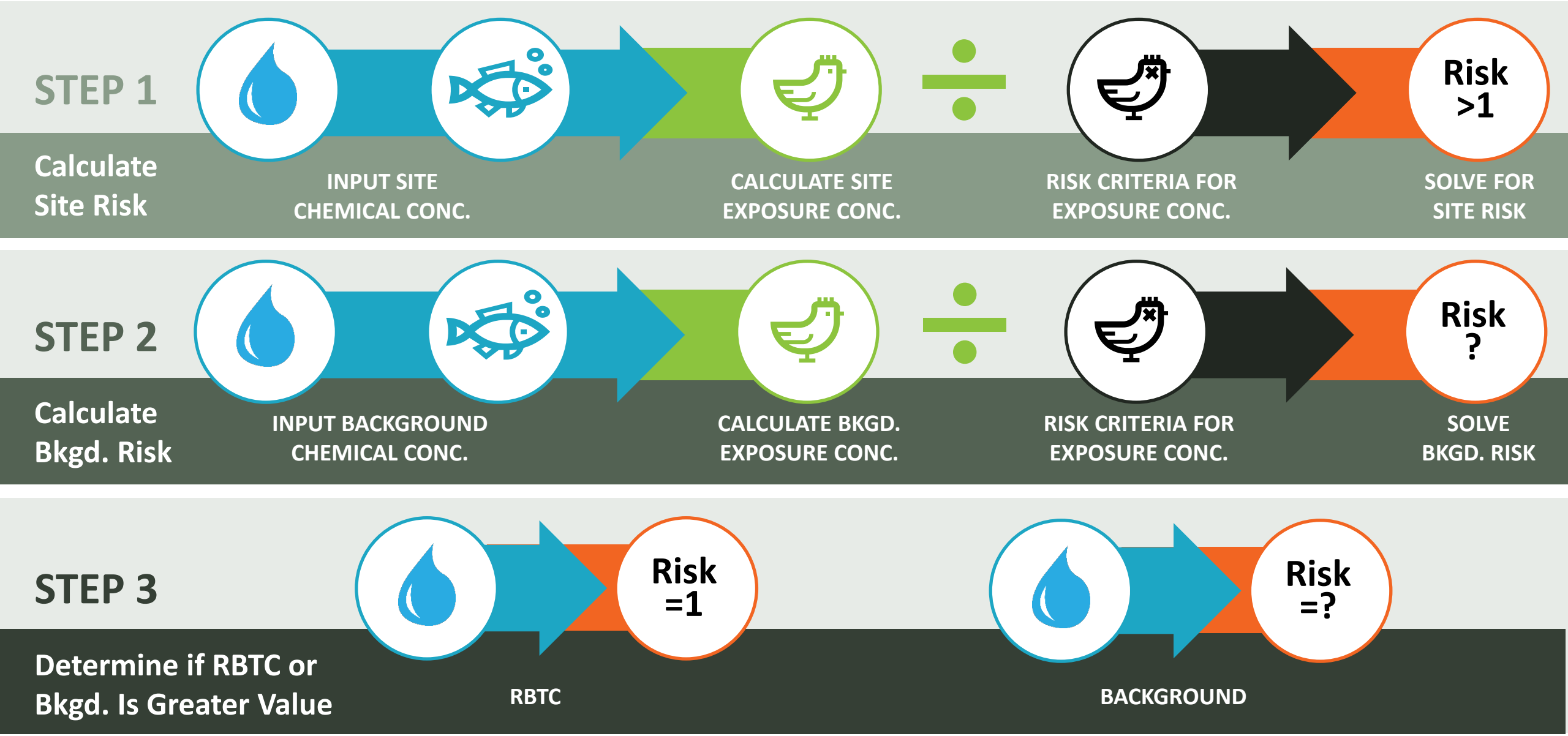
B	Angler	Dietary exposure	6	42	0.1	0.3	2

This is the concentration necessary to reduce risks below risk criteria.

This is the concentration that is sustainable at this site, and the risk that will remain.

Alternate approach to support preliminary remediation goal decisions





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ALTERNATE APPROACH

Chemical	Receptor	Risk Path	Site Conc.	Site Risk	Background Conc.	Background Risk	Risk Reduction
			(mg/kg sed.)	(Site exposure / exposure risk criteria)	(mg/kg sed.)	(Background exposure / exposure risk criteria)	
A	Mussels	Dietary exposure	800	15	140	3	88%
B	Kingfisher	Dietary exposure	6	16	0.3	0.8	No risk
B	Angler	Dietary exposure	6	42	0.3	2	97%

Chemical	Receptor	Risk Path	Site Conc.	Site Risk	Background Conc.	Background Risk	Risk Reduction
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B	Kingfisher	Dietary exposure	6	16	0.3	0.8	No risk
B	Angler	Dietary exposure	6	42	0.3	2	97%

This is the concentration that is sustainable at this site.

This is the residual risk and resulting risk reduction.

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ALTERNATE APPROACH

PRG outcome is the same.

Communication is different.

Both approaches select the greater of the RBTC and background value.

Both approaches provide the same information.

Alternate approach communication focuses on sustainable risk reduction.

- Facilitates regulator messaging to the public
- Increases stakeholder acceptance

Other Advantages of Alternate Approach

Opens discussion about balancing risk reduction with future use	Uncertainty in RBTC can be represented by a range if bckgrd is acceptable goal
If risk reductions achievable by remediating to background are not sufficient, then need to address on-going inputs and future site use prior to remediation	Less effort spent refining assumptions, such as bioaccumulation, to calculate singular value for RBTC

PRELIMINARY REMEDIATION GOAL decisions are best supported by communications focused on achievable risk reduction, rather than RISK-BASED THRESHOLD CONCENTRATIONS at urban sites.

Regulators and Stakeholders Benefit

Supports understanding of sustainable remediation goals	Consistent with intended future site use	Effort is expended where value is greatest

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Thank you!

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