15021

Public Health – Seattle & King County
Environmental Health Services Division

PROVISO RESPONSE:

Efforts to Conduct Outreach, Provide Education and Perform Activities Related to Prevention of Lead Poisoning and Exposure to Other Environmental Toxics

2017/2018 Biennial Budget Ordinance 18409 Section 100, P2

October 1, 2017

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PROVISO

Section 100 of the Metropolitan King County Council 2017-2018 Budget (Ordinance 18409) from the Environmental Health Services (EHS) Division includes proviso (P2) calling for a program to conduct outreach, education and other activities related to preventing lead poisoning and other toxics. The report shall include, but not be limited to:

A. A description of accomplishments to date;
B. A work program for 2018; and
C. A description of strategies to expand the program and potential funding options.

P2 PROVIDED THAT:

Of this appropriation, $250,000 shall be expended or encumbered solely for the costs to support a program to conduct outreach, education and other activities related to preventing lead poisoning and exposure to other environmental toxins. For the purposes of this proviso, costs to develop the program shall qualify as eligible program costs.

Furthermore, of this appropriation, $25,000 shall not be expended or encumbered until the executive transmits a report on efforts to conduct outreach, provide education and perform other activities related to preventing lead poisoning and exposure to other environmental toxins, and a motion that should acknowledge receipt of the report and reference the subject matter, the proviso's ordinance, ordinance section and proviso number in both the title and body of the motion and a motion acknowledging receipt of the report is passed by the council.

The report shall include, but not be limited to a description of accomplishments to date, a detailed work program for 2018, a description of strategies to expand the program and potential funding options.

The executive should file the report and a motion required by this proviso by October 1, 2017, in the form of a paper original and an electronic copy with the clerk of the council, who shall retain the original and provide an electronic copy to all councilmembers, the council chief of staff and the lead staff for the health, housing and human services committee, or its successor.

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SUMMARY OF THE PROBLEM

To date, Public Health – Seattle and King County (PHSKC) has had no formal system to proactively identify upcoming toxic issues and the resulting policy and service needs. Most of the work is performed as a result of toxics problems that have already occurred, community demand, rules and regulations that require us to oversee aspects of chemical uses/disposal/clean-up, or through the limited specific program that directly addresses issues of concern such as high blood lead levels in children. For example, the potential number of children in King County with high blood lead levels is approximately 10,000 cases based on national estimates. However, at this time, less than 300 are identified over the course of a year. In addition, cancer causing agents such as Polychlorinated biphenyls (PCBs) are a historical problem in places like the Duwamish valley primarily as a result of past industrial use. More recently, tests of drinking water in King County have detected chemicals like Per- and Polyfluoroalkyl Substances (PFASs), which may cause health effects like cancer, low birth weight, liver effects and immunotoxicity. As a result of underfunding by State and Federal agencies for Foundational Public Health services, there has been limited to no capacity to address these historical and emerging issues.

As the local health department, part of our mission is to protect residents from exposures to harmful chemicals, such as those above, before they can cause harmful health effects. We strive to perform this work considering equity and social justice because we know that certain groups are disproportionately burdened with exposure and negative health effects, so that we can improve the lives of all King County residents. Identifying and assigning risk to any given chemical is a difficult task that requires, sometimes, long term studies collecting, analyzing and assessing both environmental and animal data. A prevention approach using community engagement, partnerships and education is a critical response strategy to toxics in the community. The 2018 work plan will include researching and developing approaches to respond to our county's priority toxic threats, and outlining surveillance approaches to detect and proactively prevent new exposures to harmful chemicals.

INTRODUCTION

Chemicals are ever-present in our lives. Soaps, lotions, furniture, carpets, electronics, vehicles, food and its production are examples of products that contain chemicals which are eventually dispersed into the environment. Processes for goods production, cleaning, disposal, and even recycling are also ways that chemicals enter the environment. There are currently over 87,000 chemicals used in commerce in the United States. Only a small percent of these are formally evaluated for their effects on human health and the environment, and exposures to all of these chemicals are not well quantified or understood. In other words, major gaps exist in how people are exposed to these chemicals and how they may be affecting human health and the environment. The air we breathe, the water we drink, the food we eat, and the things we

touch all expose us to chemicals throughout the day, and no one is exposed to just one chemical at any given time.

The places we spend most of our time determine the number and types of chemicals to which we are exposed. It is public health's role to understand these exposures in the context of equity and social justice impacts. Inequities in quality of housing, work conditions, and proximity to major roads and industries are all factors that can increase exposure to harmful chemicals. Often the poorest populations bear the impact of chemical pollutants and have fewer resources to prevent exposures. King County's leadership in the commitment to equity and social justice for all residents will be central to our local response to the problems posed by toxic chemical exposure.

An example of a toxic chemical is lead. Lead is so harmful that the Center for Disease Control and Prevention (CDC)[1] and the Environmental Protection Agency (EPA)[2] state that no known safe blood lead level for children exists. Although its effects are not always overtly obvious, it can cause irreparable changes throughout a person's life. If a child is exposed to lead within the first two years of life while brain development is at its peak, his/her nervous system will be damaged. This could result in decreased learning ability and attention span, lower school test scores, behavioral problems, and lower workforce productivity later in life. The majority of exposure to lead is through dust and chipping from lead-based paint in housing, and the only way to detect lead poisoning in a child is a blood test. The preferred method for eliminating exposure from lead-based paint is to remove it from all housing; however, this has not been seen as an affordable or practical option for most property owners. In the interim, education, testing and limited or temporary abatement measures have been the interventions used to prevent and/or minimize exposures.

Thus, Lead is an example of a toxic chemical of primary concern in King County. Although exposures have generally decreased because of regulations, lead poisoning risk remains a significant, but preventable, environmental health problem. Primary sources of lead exposure today include paint (e.g. lead-based paint and lead-containing dust can still be found in homes built before 1978, with homes built before 1950 posing the greatest risk) and soil (from historical industrial emissions, lead arsenate pesticide use, and leaded gasoline deposits).

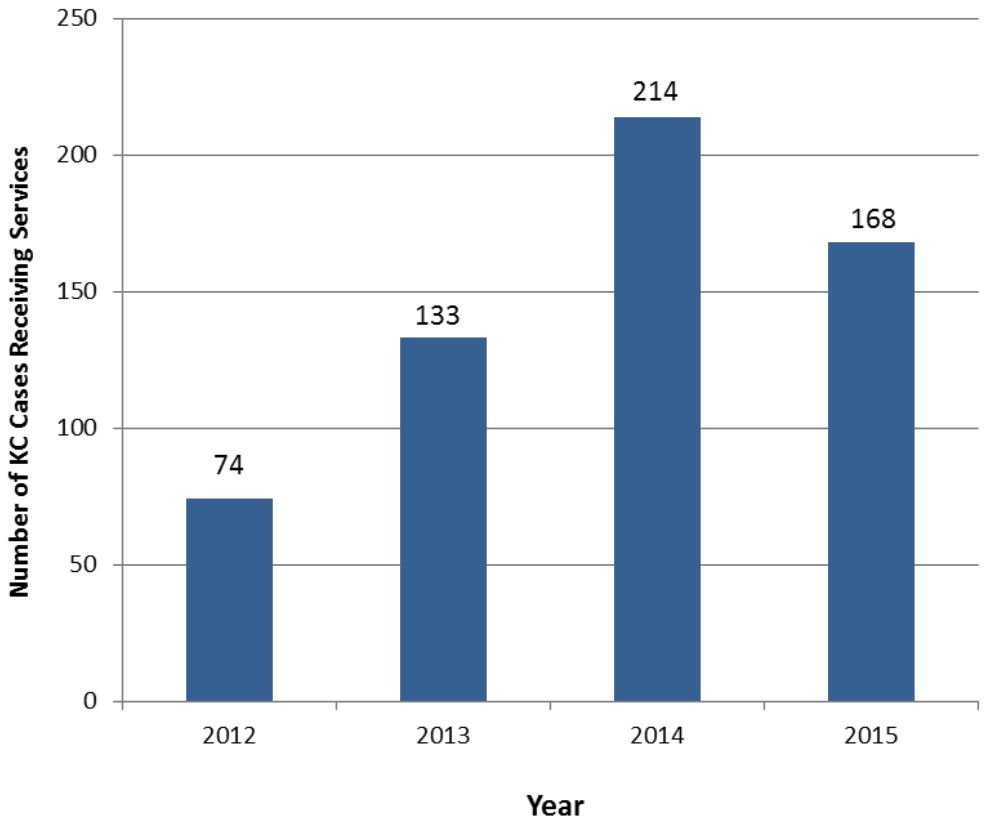
[1] Control, C. f. (2017, September 1). *Lead - New Blood Lead Level Information.* Retrieved from Center for Disease Control: https://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm

[2] Agency, E. P. (2017, September 1). *America's Children and the Environment: 3rd Edition.* Retrieved from Environmental Protection Agency: http://www.epa.gov/ace/publications/ACE_2013.pdf

The number of children from 0 – 5 years of age who receive a blood lead test in Washington is significantly lower than the national screening rate (2.5% compared to 15.9%, respectively, 2007-2012). Of those tested in Washington, approximately 2.6% had blood lead levels at or above the current medical reference level compared with the national rate of 6.6%. In King County, this results in an annual average of 120 cases identified with lead poisoning (Figure 1). While the number of children tested appears to be increasing since 2012, only a very small part of the population is tested. It is still too early to know if these numbers reflect a true upward trend. Using the national rate of lead poisoning, an estimated 8,511 children in King County may have lead levels that are too high (based on 2014 population data). This is significantly higher than the current number of children in King County who receive services from existing local actions as a result of high blood lead levels.

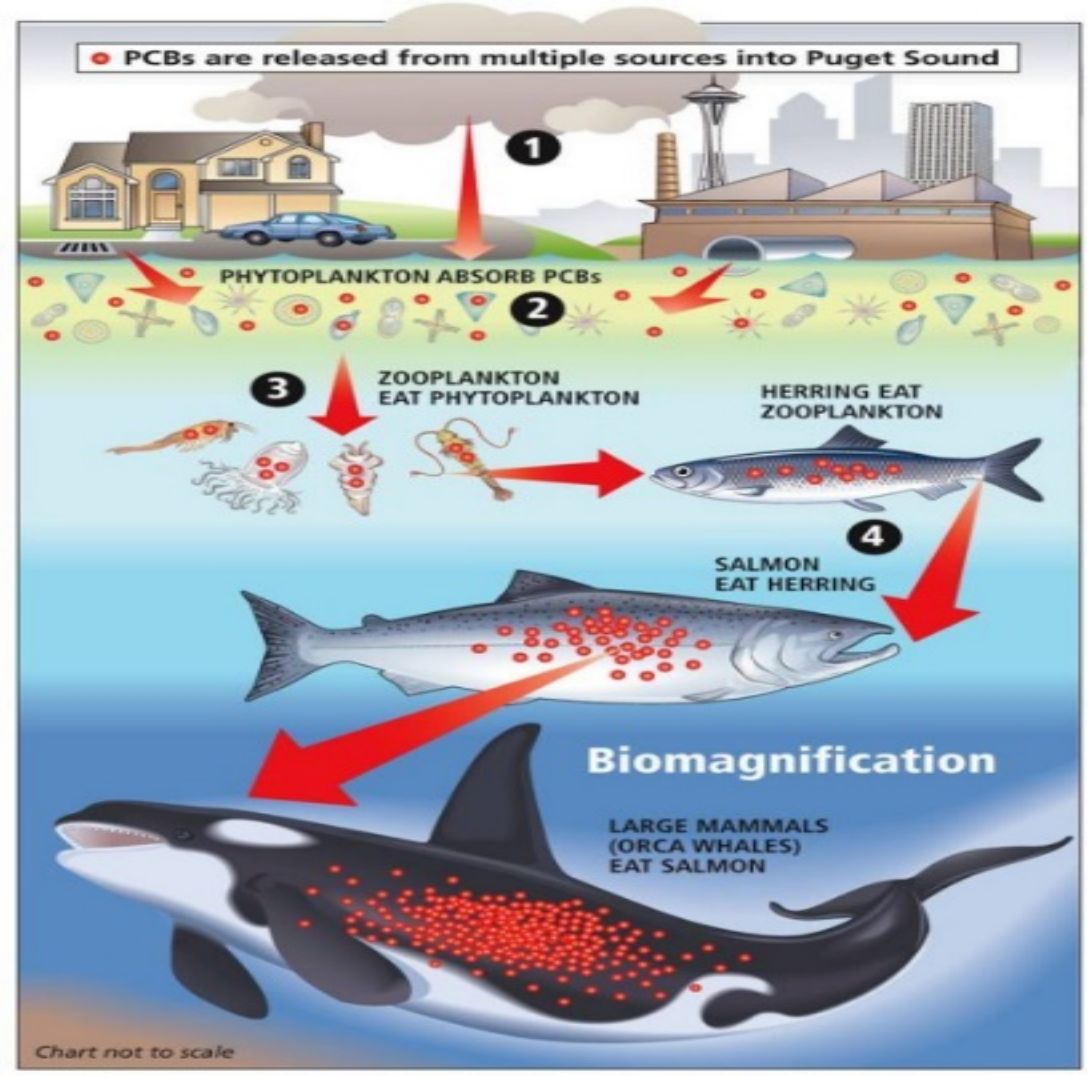
In addition to lead, many other toxics are of concern to King County communities. This includes chemicals that are now banned but remain a problem from historical use and existing chemicals with new or continuous uses. As with lead, preventing exposures before they occur is the most effective approach to improving health outcomes.

Figure1: Childhood Lead Poisoning Case Management in King County



Polychlorinated biphenyls (PCBs) are an example of a historically used class of chemicals that are no longer produced but remain in the environment. They were banned over 40 years ago, but continue to pose a problem in King County, most notably in the Duwamish Valley, due to past industrial use. PCB's were used in products such as plasticizers, paint, caulk, rubber products, surface coatings, sealants, fire retardants, glues, inks, pesticides and carbonless copy paper, and can still be found in buildings built between 1929-1979. Since they do not break down in the environment, they can be ingested by smaller organisms and then biomagnify as they move up the food chain (Figure 2).

Figure 2: Biomagnification of PCBs
(Image from Seattle Post Intelligencer)



PCBs are also a concern in industrial areas and in older homes and schools where residents, especially children, can be exposed through dust or hand to mouth behavior. The Washington State Department of Ecology[3] has found that new PCBs are being produced as by-products of many production practices, and 72% of market products tested, such as flame retardants and glue, contain PCBs above 1 part per billion. Washington State surface water quality standards require that no more than 170 parts per *quadrillion* of PCBs be detected in the water – that's 0.000017 parts per billion. Removing historical PCBs from schools, homes, and the environment, and preventing their production as by-products, is the best way to prevent exposures in King County communities.

Newer and emerging chemicals are also of great concern as are mixtures of chemicals that accumulate together, such as in dust in the home, office, or school. Dust can contain large numbers of toxic chemicals and often these mixtures lead to illnesses like sick building syndrome. Chemical exposure can also lead to effects like cancer or degenerative diseases later in life even after the exposure to the toxics has ended. Other health effects that are often related to toxics exposure include asthma, infertility, abnormal thyroid function, and poisonings (e.g., from pesticides or cleaners).

Understanding the priority toxics threats to King County residents is a challenge. It is the responsibility of State and Local Governments to develop policies and programs that protect residents from chemical hazards. Here in King County, we strive to find innovative ways to accomplish that goal. The ability to collect local environmental and health data is a barrier to our understanding of how and where the most harmful toxic exposures occur in King County. Raising awareness within King County communities will help us determine the best ways to prevent exposures and mitigate their effects.

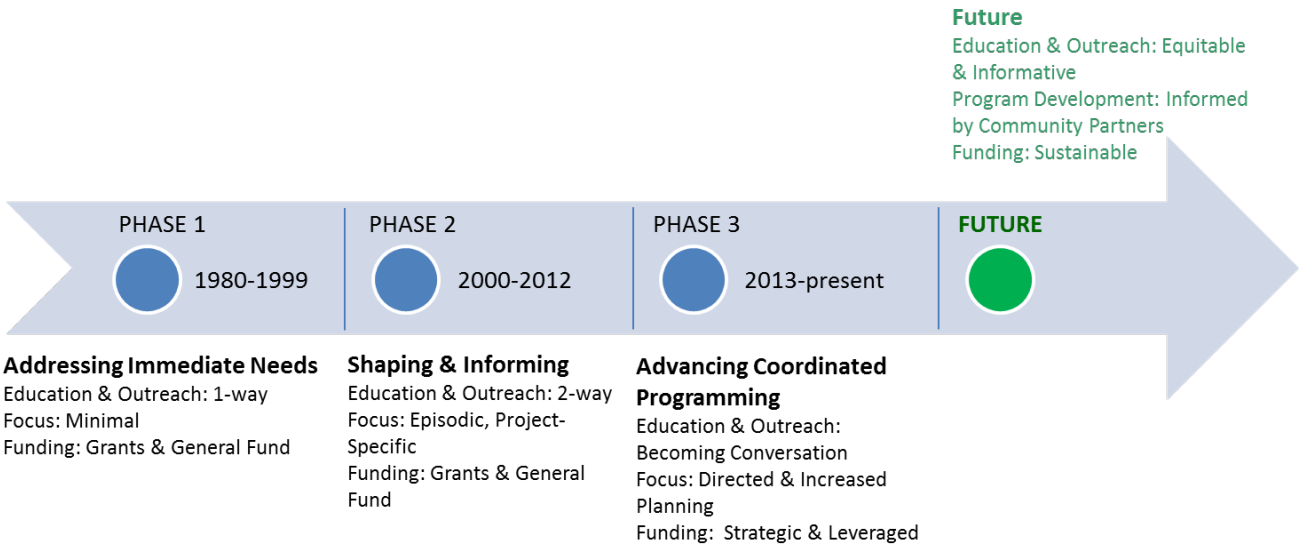
PHSKC has conducted outreach and education in communities for many years, and using available data and past work experiences, we are working to shift from a reactive response mode to prevention of exposure to toxics. PHSKC continues to engage the community to understand needs and best practice approaches. In the effort to expand the existing work and increase the focus on prevention of exposures to toxic chemicals, a new Toxics Program is being developed. This program will build on the existing toxics work (described in the Accomplishments to Date) and develop innovative ways to shift more focus to prevention of exposure, while creating ways for the many communities of King County to help shape program priorities.

[3] Ecology, D. o. (2017, September 1). *Product Testing for PCB's.* Retrieved from Department of Ecology State of Washington: https://fortress.wa.gov/ecy/publications/documents/1604024.pdf

ACCOMPLISHMENTS TO DATE

PHSKC's efforts to reduce toxics exposures have been ongoing for more than four decades and continue to expand and evolve (Figure 3). Over the years, outreach has shifted from predominantly one-way education directed to residents and businesses to more community-driven educational campaigns. Activities related to toxics have transitioned from actions identifying families impacted by lead and reducing their exposure to increasingly coordinated projects aimed at addressing exposures across a variety of toxics. Funding as well is shifting and needs to continue shifting from episodic grant-based projects to a more strategic system that aims to leverage and work with more partners. PHSKC's toxics work can be divided into three major phases that defined the types of projects and approaches to issues through time.

Figure 3. Phased Evolution of Lead and Other Toxics Work in King County



Phase 1: Addressing Immediate Needs

This phase consisted mainly of public education (e.g., informational brochures), responses to homeowner and business questions, specific project requests from the public, state or federal agencies, regulatory enforcement, and case management for lead poisoning cases. During this time, the Local Hazardous Waste Management Program (LHWMP) was formed. This partnership of agencies in King County, including PHSKC's Environmental Health Services Division (EHS), brought hazardous waste handling and disposal services to county residents. The Site Hazard Assessment program, administered by the Washington State Department of Ecology, was also formed to assist residents and jurisdictions in the clean-up of hazardous waste sites in King County. This program lost funding in 2011. Finally, a methamphetamine production response program was established to offer health and safety information and decontamination oversight. Although this program was also defunded in 2011, EHS still receives calls occasionally from the public and provides guidance on illegal drug lab clean up when requested.

Table 1: Addressing Immediate Needs

Initiatives	Activities
Customer Service	• Inquiries and requests from the public and businesses • State and federal request responses
Childhood Lead Poisoning Case Management	• Individualized response service for the identification and reduction of lead exposures
Household Hazards Program	• Compliance inspections for fumigation and asbestos standards
Illegal Drug Lab Program	• Health and safety evaluations • Assure compliance with state regulations
LHWMP	• Household chemical collection events
Site Hazard Assessment Program	• Evaluation and ranking of sites for clean-up

Phase 2: Shaping and Informing

The period encompassing 2000-2012 included an increase in activities and marked the beginning of EHS's work to influence policy and systems. Increased communication with communities helped to shape the focus of ongoing activities. Pursuits that began in this phase include the Dirt Alert program, which continues but with a shift from home soil testing to outreach and education. Finally, lead poisoning case management continued but expanded with more community engagement and focus on housing as a holistic place-based policy strategy. These additional projects were primarily funded through a series of grants and contracts.

Table 2: Shaping and Informing

Initiatives	Activities
King County Dirt Alert Program	• Determination of the extent and quantity of arsenic and lead in soil from Asarco Smelter Plume near Tacoma
Health Community Planning Program	• Improve community health through cross-cutting issues including land-use, transportation, housing, and climate change • Work with the King County Board of Health to create the Healthy Community Planning Guidelines and Recommendations

Phase 3: Advancing Coordinated Initiatives

Finally, from 2013 to present, activities in this phase represent a concerted effort towards the development of sustainable and equitable community responsive actions. Important themes of this phase are improving residents' healthy years lived and approaching projects with a goal to reduce health inequity. Projects are also settled into categories with more distinction between focusing on the individual (e.g. direct information requests, case management) and on communities (e.g., surveillance, community partnerships, policy/systems).

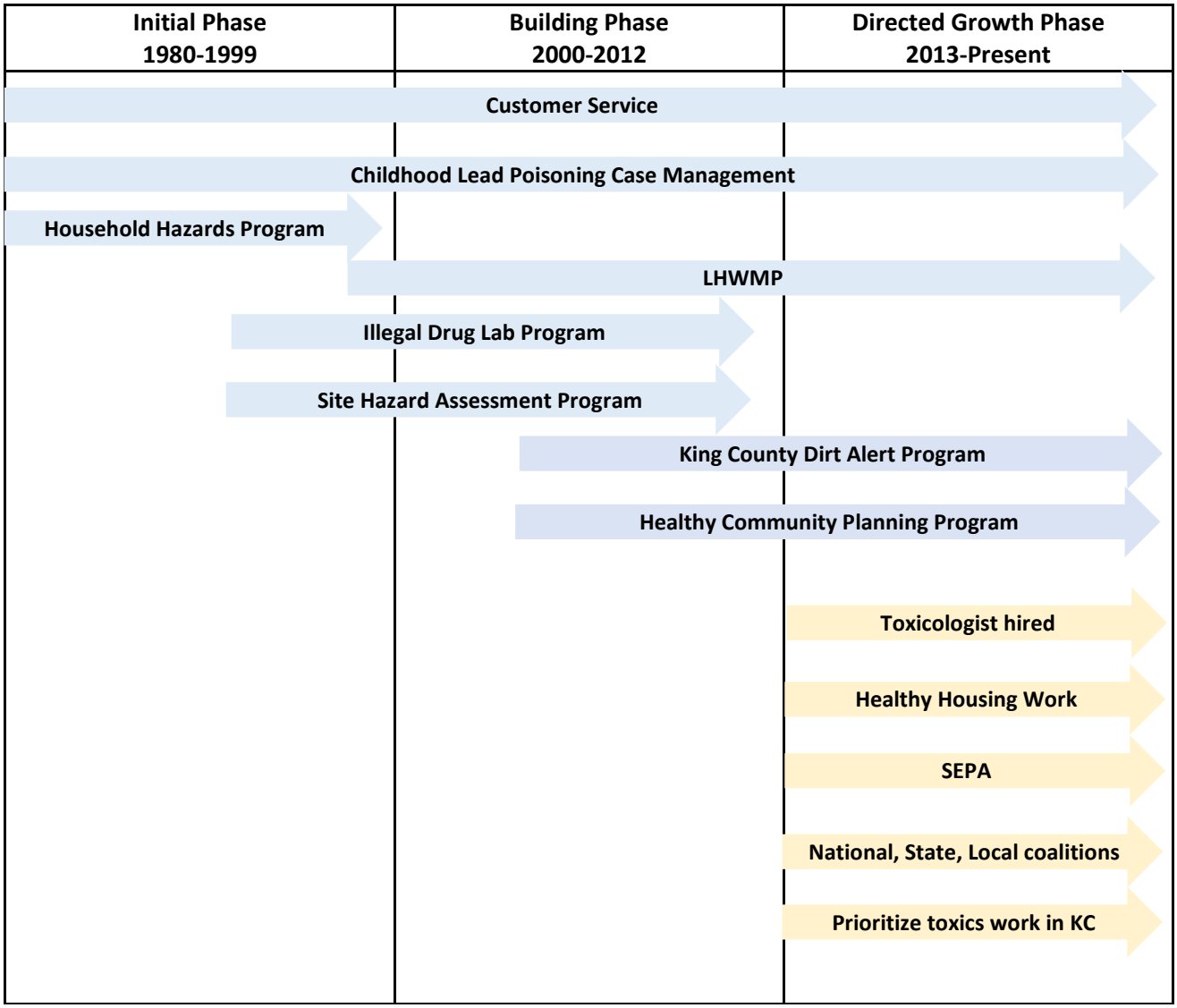
Projects started during this phase include King County's Best Starts for Kids (BSK) initiative which recognized the extreme impact of lead and toxics exposures on child development and a Board of Health policy focus on healthy housing.

This phase has also been marked by increasing work to develop and/or update standards and guidelines with various local, state or national partners that can help with eliminating or reducing exposure to toxics.

Table 3: Advancing Coordinated Initiatives

Initiatives	Activities
Healthy Housing Work	• Subcommittee formed whose work resulted in draft Board of Health Healthy Housing Guidelines and Recommendations that include considerations for lead and other toxics
Best Starts for Kids	• Prevention and early intervention investments that promote healthier, more resilient children, families and communities
State Environmental Policy Act	• Exploration and use of State Environmental Policy Act (SEPA) reviews to identify demolition of buildings with potential lead or polychlorinated biphenyl (PCB) risks
Development of abatement procedures for lead and PCBs during demolition	• Partnership with Labor & Industry and King County Department of Planning and Environmental Review (DPER) to address permitting regulations and enforcement regarding demolitions
Update occupational lead standards	• Initiated by Public Health's Health Officer, collaborate with LHWMP on policy recommendations to update the current occupational lead standards and other future strategies that will reduce worker lead exposures
Prioritization of toxics-related work	• Prioritize toxics effecting King County based on severity of adverse health impacts, impacted population, readiness of audience, equity, and partnerships
National, State and Local coalitions	• National Safe and Healthy Housing Coalition steering committee, the Beacon Hill Environmental Health Collaboration Technical Panel and the King County Chemicals of Emerging Concern Technical Panel and others

Table 4: Timeline of progression of initiatives related to toxics from 1980 - Present



<u>Future Work in 2018 and beyond</u>:

PHSKC's work on lead and other toxics has been defined by constant change and growth. This evolution has been deliberate with the vision of a sustained program that prevents disease and illness caused by toxics throughout the environment. The next progression of work aims to be driven by internal and community partners, with long term goals and objectives thoughtfully planned and sustained using a mix of funding strategies.

PHSKC's future toxics work will aim to stay on top of existing and emerging contaminants and prepare to respond to these issues with the goals to:

- Identify and reduce exposure to environmental toxics in King County, with a specific focus on lead, to increase residents' healthy life years lived.

- Create equitable and culturally relevant services through meaningful partnerships.
- Build on past experiences to improve and innovate into the future.

Underpinning these goals are six principles that will guide the work:

- Balance evidence-based strategies with new and innovative strategies.
- Plan programming that is not reactionary.
- Add value to public health improvement initiatives and be good stewards of financial opportunities.
- Equitable outcomes guide the program development, implementation and evaluation.
- Engage communities throughout the process of program development and implementation.
- Leverage partnerships within the division, department, other agencies and stakeholders.

WORK PLAN FOR 2018

The 2018 Work Plan will set the foundation for a sustainable Toxics Program for King County. Staff will identify and partner with stakeholders, which include medical providers, community-led health boards and other professional groups, to develop a program model that integrates policy, systems, and service delivery work. Identifying and including these stakeholders in the planning process is essential in achieving equitable outcomes. The 2018 work plan is funded by the allocation set aside by this budget proviso, staff supported through Best Starts for Kids' allocation and other EH staff that will provide support as needed (Appendix A, Table 5).

The planning process will be approached in a two-part strategy.

- First, to expand and strengthen partnerships while simultaneously building awareness of toxics in targeted stakeholder groups. In order to get the most value from our partnerships, technical and scientific information about toxics needs to reach them in ways they can hear and understand. This builds a common platform to plan a program that addresses stakeholder needs and priorities more equitably.
- Second, the development and implementation of an inclusive, strategic planning process led by staff in which stakeholders take an active role in shaping program priorities. The process will assess and enhance the strengths of current activities and set future priorities that channel the energy and resources of internal and external partnerships toward a common set of goals. Work will leverage PHSKC's engagement in county-wide initiatives (e.g. Communities of Opportunities, Best Starts for Kids) and evaluate evidence-based, best-practice strategies from other health departments for their ability to improve environmental health conditions in King County.

<u>Awareness Building and Partnership Development</u>: Based on initial stakeholder feedback, knowledge gaps exist across multiple communities and groups related to the impacts of lead and other toxics. For each toxics issue, it will be important to understand where awareness of the issue is needed in order to tailor an effective approach. This is key in harnessing the power of partnerships to collaboratively set goals and develop successful program strategies. Using

lead as an example, initial efforts will address awareness across clinicians and medical professionals, childcare providers, and communities likely to be disproportionately impacted. Staff plans to use the following strategies to build a common understanding of the problem:

- Develop a method to understand gaps in provider use and application of the Washington State Department of Health lead screening questionnaire for children under 24 months, which determines whether blood lead testing is needed.
- Develop a method to educate childcare providers using multiple media. Staff will work to understand where more education and resources are needed and address this in program planning.
- Develop strategies to educate communities across King County in regards to health literacy about toxics. Staff will work with community partners to co-create targeted strategies to help PHSKC understand the knowledge gaps and focus awareness activities most effectively (partially supported by a grant from the CDC Appendix A, Table 5).
- Collaborate with partners to seek and support establishment of loan programs for housing owners to conduct lead abatement.

A milestone for this work includes an identified list of stakeholders to partner in program development and a plan to increase health literacy in effected communities.

Develop Long Term Program Plan: This work will focus on developing an inclusive process for building a long-term model. As listed in the section *Accomplishments to Date,* a variety of efforts has been and will continue to serve King County residents. Projects that expand on existing work allow for easier leveraging opportunities. Staff and partners will also bring valuable knowledge and experience. Some examples of work to expand upon existing work within EHS include:

- Explore a lead surveillance system for King County that can communicate with the Washington Department of Health database (partially supported by a grant from the CDC).
- Work with partners in the enhancement, enforcement, and management of lead and PCB abatement during demolition of older buildings.
- Develop school inspection services focused on indoor environmental health (this work is required under WAC 246-366, but currently unfunded) and identify King County schools in need of lead and PCB abatement based on age of building.

Beyond the existing work, staff will strategize with partners to build the capacity needed to execute both existing work and close other gaps in policy, systems, and service delivery work. The one time budget allotment of $250,000 from this proviso will fund the staff capacity to perform this planning in conjunction with staff supported by BSK. A preliminary scan of funding strategies used by topically similar programs identified several funding possibilities (see section *Strategies with Funding Options*). Program planning will include a deeper examination of the

options listed, identification of additional strategies, how and what they support, and a feasibility analysis for local implementation.

Milestones for program planning include the development of a Toxics Program Strategic Plan that includes the integration of existing services and a funding feasibility analysis.

Strategies To Expand Program Funding Options

PHSKC's strategies focused on lead and other toxics up to this point in time have been initiated by a mix of drivers, including understood risks and impacts, priorities determined with community and other agency partners, requirements/mandates, and local, state, and federal funding opportunities. Expanding work on toxics will continue to fall within program components that have been identified as best practice program elements, such as education and outreach, partnership development, policy development, case management, evaluation, surveillance and sustainability planning. The 2018 Work Program will allow for additional research and communication with community and agency partners to determine how to prioritize strategies to expand PHSKC's efforts on toxics. For example, gaps in the program such as sufficient funding for community engagement projects, surveillance, and lead abatement will be identified in order to prioritize the types of mechanisms that will be developed.

Funding for work outlined in the previous *Accomplishments to Date* section has come from a mix of sources, including but not limited to state and federal contracts, grants, local fees and short term levies (A summary of the main funding is provided in Appendix A, Table 5). It is expected that an expansion of efforts will require increased sustainable sources as well as new opportunities brought forward with partnerships.

Initial research has begun to identify potential funding sources for a Toxics Program (summary shown in Appendix A, Table 6). This research was derived from past experiences within King County, review of other programs nationwide, and ideas on novel solutions that may serve to fill gaps. For example, there are a number of fee for service opportunities eligible for Medicaid reimbursement (see Appendix A, Table 6). A summary of models that have been successful in their approach and application in other PHSKC activities or County programs are shown in Appendix A, Table 7, but time and further scrutiny are needed to determine their practicality for a local Toxics Program. Early review of these funding sources has been done to consider viability and a more complete analysis of top strategies (on local feasibility, timing of funding availability, best methods to access, limiting factors, and ability to involve multiple stakeholders) will be completed in 2017-2018.

APPENDIX A

TABLE 5. PAST FUNDING STREAMS OF EARLY WORK INITIATIVES

Past/Current Toxics Initiatives	Funding Source
LHWMP (Customer Service, Case management, Household Hazards)	LWHMP Fees Two EPA Targeting Lead Poisoning grants (2005-2007 & 2008-2010; completed) CDC Lead Poisoning Prevention Grant (2011; completed)
Site Hazard Assessment	Washington Department of Ecology Contract (1994-2011; discontinued)
Illegal Drug Lab	EH staff time (1998-2008) EPA Brownfield Assessment Grant (2008-2009; discontinued) Fees (not full cost recovery)
King County Dirt Alert	Washington Department of Ecology Contract (2000- current)
Healthy Communities Planning	Washington Department of Health Block Grant CDC Grants (in partnership with PHSKC's Chronic Disease and Injury Prevention Division) EPA Duwamish Superfund Cooperative Agreement General Fund
SEPA Review	General Fund
Lead and Toxics Awareness Building	Best Start for Kids Levy 2017/2018 Budget Proviso allocation 2017/2018 CDC Lead Poisoning grant

TABLE 6. EXISTING FUNDING SOURCES FOR POSSIBLE LEVERAGE

Source	Example of Sources to Investigate
Grants (government and foundations)	▪ Environmental Protection Agency ▪ Center for Disease Control and Prevention ▪ Housing and Urban Development ▪ Community Development Block Grant ▪ Kresge Foundation ▪ Seattle Foundation
Public/Private Partnerships	▪ Philanthropic awards ▪ Center for Disease Control and Prevention Foundation
Contracts	▪ Fee for service contracts with cities tailoring services based on need. A menu of choices can include technical assistance, on-site consultations, investigation support, policy analysis, and training. *For example, PHSKC's Solid Waste Section contracts with City of Seattle for sewer baiting and rodent control programming.*
Medicaid	▪ Medicaid Managed Care incentives ▪ Reimbursement for direct services ▪ Early Periodic Screening and Diagnostic Treatment ▪ Healthy Homes

TABLE 7. EXISTING FUNDING MODELS AS POSSIBLE SOURCES

Source	Description
Fees	Building off models currently used within EHS, programming that targets fees to impacted residents, outcomes, or users would be explored. Examples of possible fee structures based on new housing surcharges, city partnerships, demolition projects and fees on industry projects. This could also be in partnership and in support of other jurisdictions.
Trusts	Trusts created for the promotion of public welfare when properly backed and well maintained, can be a form of sustainable funding for an aspect of the program that may be limited by amount and partnership level. Examples of possible trusts include Housing Trust Fund and the King County Housing Opportunity Fund.