

**Jefferson Parkway Advisory Committee (JPAC)  
Final Report  
Submitted by Peak Facilitation Group  
December 2018**

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**FORMATION AND OBJECTIVES OF THE JEFFERSON PARKWAY ADVISORY COMMITTEE**

The Jefferson Parkway Public Highway Authority (JPPHA) Board of Directors formed the Jefferson Parkway Advisory Committee (JPAC) following a community meeting in July 2017, at which several community members expressed interest in continuing the conversation with staff about the Jefferson Parkway, and one community member suggested the formation of a working group. The JPPHA Board agreed that continued open and honest engagement with stakeholders would be a valuable investment of time and resources, both for the JPPHA and the stakeholders involved and would bring benefit to the project for the larger community.

In September 2017, the JPPHA Board released an application for membership to the JPAC. The application asked applicants to identify and explain their perspectives and the experiences that allowed them to represent those perspectives. Perspectives and geographies listed in the application were: Northwest Arvada resident (Leyden Rock, Candelas, etc.), Broomfield resident, Jefferson County resident, resident outside of Jefferson and Broomfield Counties who will use the Parkway, Broomfield business, Golden business, and environmental advocate. The application also asked about the applicant's primary interest or concern regarding the Jefferson Parkway and how the applicant planned to demonstrate civility in sharing those interests and concerns on the JPAC. In consultation with Bill Ray, Executive Director of the JPPHA, Kevin Standbridge, Deputy City and County Manager of Broomfield, and Peak Facilitation Group, the facilitation firm hired for the JPAC, the JPPHA Board selected twelve members to serve on the JPAC. The appointed JPAC members represent the distinct perspectives, geographies, and expertise related to the Jefferson Parkway listed in the application. *The application for membership is provided as an attachment to this document. A list of members is provided as an attachment.*

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**JPAC PROCESS**

The purpose of the JPAC, as agreed by all members during the first meeting, is to discuss issues related to the Jefferson Parkway, learn together, and provide feedback to the JPPHA Board via reports and/or presentations. The JPAC met nine times between January 2018 and November 2018, usually on the third Thursday of each month from 6:30pm – 8:30pm at the Apex Field House in Arvada. The meetings were open to the public. As a group, JPAC members identified and prioritized key topics related to Jefferson Parkway to learn about and dedicated four meetings (February – July) to achieving these shared learning objectives. Following this group learning phase, JPAC members proposed candidate recommendations for the full JPAC's consideration, with the goal of presenting a package of recommendations to the JPPHA Board. It is worth noting that the JPAC discussed concerns expressed by the Federal Aviation Administration (FAA) about the land use proposal for the Parkway that would fall within the Rocky Mountain Metropolitan Airport's runway protection zone, and their input played a critical role in the resolution of this concern through the negotiation of an alternative alignment for the Parkway. The JPAC's meeting dates and discussion topics are summarized below.

- **January 18:** History and status of the Jefferson Parkway; agreement on JPAC protocols (*provided as an attachment to this document*); nomination of agenda items for the JPAC
- **February 20:** Map-based technical presentation by HDR Engineering and review of environmental permits and approvals; prioritization of JPAC agenda items

- **March 15:** Noise study presentation by Atkins Engineering and wildlife crossing and safety presentation by Colorado Department of Transportation (CDOT) and Colorado Parks and Wildlife (CPW)
- **May 17:** Presentations about the public health implications related to Rocky Flats by Colorado Department of Public Health and Environment (CDPHE), and Rocky Flats historians Jon Lipsky and Kristen Iversen
- **July 19:** Presentation of the Jefferson Parkway Financial Feasibility Study and preliminary proposal presentations by JPAC members
- **August 16:** JPAC member recommendation presentations and discussions
- **September 20:** JPAC prioritization and refinement of recommendations
- **October 23:** Final agreement on recommendations (part one)
- **November 10:** Final agreement on recommendations (part two)
- **November 15:** JPAC presentation to JPPHA Board on final recommendations

Through a collaborative consensus-building process, the JPAC worked together to ensure that every member supported each proposed recommendation (with several exceptions) by discussing, reframing/rephrasing, prioritizing, and refining the recommendations to gain maximum support for each recommendation by JPAC members. The JPAC reached full support on a range of recommendations related to the Jefferson Parkway and categorized them into several topic areas:

- Process
- Rocky Flats and environmental impacts
- Community safety, connectivity, and wellbeing

There were several candidate recommendations that received mixed JPAC support. The JPAC decided to submit these recommendations as well and note the various perspectives.

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### **APPRECIATION**

At the end of the process, the JPAC expressed appreciation for the time and consideration that JPPHA Board invested in them to engage in this discussion and to review these thoughtfully established and carefully written recommendations as well as the opportunity to provide input about this critical community issue.

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### **ATTACHMENTS**

- Attachment A: List of JPAC members
- Attachment B: Application for JPAC membership
- Attachment C: JPAC Protocols
- Attachment D: Summaries of all JPAC meetings (including presentation materials)
- Attachment E: JPAC member Randy Stafford's comments on CDPHE's presentation
- Attachment F: Presentation to the JPPHA Board

## FINAL JPAC RECOMMENDATIONS

Below are the final JPAC recommendations for the JPPHA Board's consideration. Please note, these recommendations are not listed in any order of priority or intended sequence, with one exception: The JPAC respectfully requests that the JPPHA Board consider the recommendation regarding continual JPAC engagement first.

### Recommendations Pertaining to Process

These recommendations received full support by the JPAC.

- *The JPAC should meet regularly (subject to cancellation during the RFP process and construction of the Jefferson Parkway).*
- *JPPHA should state in the request for proposals (RFP) that evaluation criteria will include creativity, innovation, and aesthetics.*
- *JPPHA should ensure in perpetuity that local communities do not subsidize the operation and maintenance of the Parkway.*
- *During the period of time when the Parkway is not contiguously connected to the rest of the beltway, JPPHA should promote utilization of the Parkway by using financial incentives and/or other methods.*
- *JPPHA should clarify for the public how the Jefferson Parkway helps achieve current Front Range transportation objectives and why JPPHA chose the Indiana Street alignment over other alternative alignments (e.g., Highway 93).*

### Recommendations Pertaining to Rocky Flats and Environmental Impacts

These recommendations received full support by the JPAC.

- *JPPHA should adopt the mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Statement (EIS).*
- *JPPHA should require dust control and mitigation during the construction of the Jefferson Parkway to deal with high winds. Additionally, air pollution control measures and strategies are required under Colorado's State Implementation Plan for the Denver Metro/North Front Range non-attainment area under the Clean Air Act. Dust control measures should be taken along the entire length of the Jefferson Parkway.*
- *The JPPHA Board should install adequate air monitoring equipment and continuously monitor air quality in the Indiana Street corridor to assess whether construction activity re-suspends Rocky Flats contaminants into the air. Monitoring should begin before construction to establish an air quality baseline. Prior to construction there should be a transparent public process to show the methodology used to design the air monitoring equipment and allow people to:*
  - *Evaluate and comment on the air monitoring equipment*
  - *Specify thresholds of airborne contamination that should not be exceeded*
  - *Specify consequences of exceedances of those thresholds*

- *JPPHA should require testing for plutonium and also engage an expert independent of the concessionaire to identify any additional Rocky Flats contaminants to sample within the Parkway right-of-way and other impacted areas before allowing any construction-related, surface-disturbing activities, and the JPPHA should provide a public comment period to review the test results.*
  - *Results showing elevated levels of contaminants should be reported to CDPHE and any other relevant agencies.*
  - *If contaminant levels exceed CDPHE's standards, construction should pause in the area where contaminants are found while mitigation measures are followed, then a resampling should be conducted.*
- *JPPHA should develop a contingency plan for the unlikely but potentially disastrous event that a buried nuclear dump site is unearthed during construction of the Parkway.*

### **Recommendations Pertaining to Community Safety, Connectivity, and Wellbeing**

These recommendations received full support by the JPAC.

- *JPPHA should include multimodal paths designed to allow users to cross or travel along the Parkway. Those paths should link up at the north and south ends and with the Greenway Trail. Development of multimodal options should be included in Phase 1 of construction.*
- *Mitigation measures should be taken to insulate the residential neighborhoods from the negative impacts of the Jefferson Parkway during the construction phase and when operational, to reduce the impacts of the Parkway dividing the community, and to keep the residents living alongside the Parkway safe. Mitigation measures should include:*
  - *Regarding sound mitigation, measures should be considered carefully, and creative solutions should be explored and implemented.*
    - *One option could include a sound absorbing tunnel, similar to the one built at the Beijing Zoo. Other creative solutions of this type, beyond traditional sound mitigation measures, should be encouraged.*
    - *Another option could be to deepen the roadway in residential neighborhoods as appropriate and build several at-grade, wide pedestrian walkways to partially cover the span to deflect noise and light pollution. Heavy vegetation could reduce light and sound impacts in the open areas between pedestrian walkways.*
    - *Traditional sound walls should be avoided near the Leyden Rock community, per the wishes of the local residents.*
  - *Regarding light pollution (both highway lighting and headlights from motorists), tall light poles should be avoided, and highway lighting should be directed to the roadway and not visible to homes lining the Parkway or the surrounding neighborhoods. Signage for the Parkway should be positioned well away from residential neighborhoods.*
  - *Regarding safety, guard rails and similar safety measures should be utilized to keep vehicles away from residences in the event of an accident.*
- *JPPHA should prioritize measures to maintain the continuity of the Leyden Rock neighborhood. The City of Arvada embraces community connectivity and has invested significant time and resources to bring neighborhoods together. The Leyden Rock subdivision has organically become a strong community, with 15 community events in 2017 which drew over 5,200 total participants.*
  - *There should be several wide, clear, park-like pedestrian walkways that span the Parkway to connect one end of the Leyden Rock community to the other.*

- *The design should integrate forested areas in empty spaces between the walkways to improve safety, provide sound mitigation, create green space, and increase neighborhood connectivity.*
- *The JPPHA should pursue partnerships with the City of Arvada and the Leyden Rock Metro District to maintain the character of the Leyden Rock neighborhood.*
- *The City of Arvada should ensure that the objectives in the City of Arvada's community plans, including the Arvada Arts and Culture Master Plan, the Arvada's Bicycle Master Plan, and the Parks Plan are incorporated into Parkway design. These objectives include expanding the arts and culture throughout Arvada and improving bicycle and pedestrian access (i.e., reducing barriers to access).*
- *The design should include provisions for an access road from the northern side of the Leyden Rock neighborhood, along the Parkway, to the Highway 72 interchange. The access road could:*
  - *Provide residents with an additional escape route if the area was threatened by a natural or man-made disaster.*
  - *Provide an alternative route for access by first responders in the event that 82nd Street is blocked by flood, fire, or accident.*
  - *Be slaved to the Parkway, or a separate roadway. Additionally, it could be tolled or un-tolled.*
  - *Increase utilization of the Parkway by giving Leyden Rock Residents access they would not otherwise have. The increase in tollway utilization could be significant.*
  - *Reduce traffic on Indiana and delay the need for expansion on that roadway.*
  - *Reduce local opposition to the Parkway. The City of Arvada may need to consider partnering with the Authority in this effort since the access road would benefit and work towards many of the City's priorities.*
- *JPPHA should ensure the objectives of all Master Plans for the county and municipalities adjacent to the Parkway are included in the final design.*

### **Recommendations with Mixed Levels of JPAC Support**

These recommendations did not receive full support, but JPAC members would like to submit them and ask that the JPPHA Board consider the various perspectives represented for each recommendation.

- *JPPHA should change the alignment of the Jefferson Parkway to go up Highway 93 instead of Indiana Street to avoid conflict regarding public health and contaminants from Rocky Flats; the west side of Rocky Flats is less contaminated than the east side.*
  - *A majority of the JPAC does not support this recommendation because it is outside the scope of this group and the design decisions have been established.*
  - *Other members of the JPAC support this recommendation because it would avoid the controversy of stirring up Rocky Flats contaminants.*
- *JPPHA should utilize Indiana Street as the northbound lanes of the Parkway and construct the new southbound lanes in the Rocky Flats right-of-way (from west 96th Avenue north to Highway 128). A Parkway entrance/exit could be provided at 96th Avenue onto Indiana Street.*
  - *A majority of the JPAC does not support this recommendation because they believe it would take away transportation opportunities from local residents. These members*

- oppose the idea of taking away access to a public road. Additionally, people traveling from east of Indiana Street would not have access.*
- *A minority of the JPAC supports this recommendation because they believe that very few people will use the Parkway if they have the option to use Indiana Street. Additionally, they believe that the reuse of an existing right-of-way and the necessity to only add two lanes to Indiana Street would substantially decrease the cost of construction.*
  - *JPPHA should sponsor an independent review of public health impacts by a qualified national institution that is independent of the Department of Energy (e.g., the National Academy of Sciences). The independent reviewer should assess risks and conclusions surrounding public health impacts.*
    - *A majority of the JPAC does not support this recommendation because they question the necessity of conducting a retrospective review and believe it would be redundant.*
    - *Others support this recommendation, emphasizing the importance of clarifying the public health impacts associated with Rocky Flats.*

**ATTACHMENT A:  
LIST OF JPAC MEMBERS**

## **JPAC Members**

Bini Abbott  
Bill Branyan  
Rebecca Kallio  
Vera Ladtkow  
Britta Nelson  
Ian Owens  
Brent Smith  
Randy Stafford  
Jill-Ellyn Straus  
Gerland Taylor  
Brett Vernon  
Marc Wills

**ATTACHMENT B:  
JPAC APPLICATION FOR MEMBERSHIP**

**Jefferson Parkway Public Highway Authority (JPPHA)  
Statement of Interest Form – Jefferson Parkway Advisory Committee (JPAC)  
September 2017**

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**Applicant Name:**

**Applicant Address:**

**Applicant Email Address:**

**Which evenings are you generally available for a meeting? We anticipate meeting once a month for nine months, ideally on the same day of the week.**

- Monday
- Tuesday
- Wednesday
- Thursday

**The JPPHA Board values the diversity of perspectives regarding the Jefferson Parkway and intends for the membership of the Jefferson Parkway Advisory Committee (JPAC) to reflect that diversity. Below is a list of perspectives that the Board would like to see on the JPAC; the Board may appoint one or more individuals representing each perspective. Please indicate which perspective(s) you will be able to represent and then explain the experience that allows you to represent that/those perspective(s).**

- Northwest Arvada resident (Leyden Rock, Candelas, etc.)
- Broomfield resident
- Jefferson County resident
- Resident outside of Jefferson and Broomfield Counties who will use the Parkway as part of a regular commute
- Broomfield business (Business name: \_\_\_\_\_)
- Golden business (Business name: \_\_\_\_\_)
- Environmental advocate

**Please explain in the box below what experience you have that has prepared you to represent the perspective(s) you selected above.**

**Jefferson Parkway Public Highway Authority (JPPHA)**  
**Statement of Interest Form – Jefferson Parkway Advisory Committee (JPAC)**  
**September 2017**

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**What is your primary interest or concern regarding the Jefferson Parkway? Please explain in the box below. Note: The JPPHA Board values perspectives both in support and in opposition to the Parkway.**

**The JPPHA Board is aware that there are strong opinions regarding the Jefferson Parkway and wants to ensure that the JPAC discussions are safe, civil, and constructive. The Board will select applicants for the JPAC based on demonstrated civility. Please describe how you have demonstrated civility in previous contentious situations in your life and how you will bring those same skills to JPAC discussions.**

**ATTACHMENT C:  
JPAC PROTOCOLS**

Jefferson Parkway Advisory Committee  
Protocols – FINAL 2.7.18

**Purpose and Authority**

The purpose of the Jefferson Parkway Advisory Committee (JPAC) is to discuss issues related to the Jefferson Parkway, learn together, and provide feedback to the Jefferson Parkway Public Highway Authority (JPPHA) Board of Directors via reports and/or presentations to the Board.

**Working Group Members**

The Working Group is comprised of twelve named members selected by the JPPHA Board of Directors, Bill Ray, Kevin Standbridge, and Heather Bergman.

Bini Abbott  
Bill Branyan  
Rebecca Kallio  
Vera Ladtkow  
Britta Nelson  
Ian Owens

Brent Smith  
Randy Stafford  
Jill-Ellyn Straus  
Gerald Taylor  
Brett Vernon  
Marc Wills

**Representation**

There will not be proxies allowed, but if someone who represents an organization or neighborhood is unable to attend a JPAC meeting, they may ask that someone else attend the meeting. That person would sit in the public seats to observe and take notes, but would not participate in the meeting.

**Primary Driver of Group Discussion Topics**

The JPAC group members are the primary drivers of the topics that will be discussed. Group members may request or invite experts to come speak about specific topics.

**Decision Making**

On a case-by-case basis, JPAC members will decide how their agreements, or lack thereof, will be described to the JPPHA Board of Directors.

**Meeting Attendance and Public Participation**

All the JPAC meetings are public. Any member of the public may attend, but not participate in, JPAC meetings. JPAC members may decide in advance of a meeting if they would like to reserve time in the meeting for public comment. The group will specify how much time they would like to set aside for public comment. Members of the public will also be offered the opportunity to write their thoughts on comment cards.

**Meeting Announcements**

JPPHA staff will post a notice about the commencement of the JPAC with all the meeting dates in local newsletters and reports. The entire meeting schedule will be posted on the JPPHA website. The agendas will be posted one week in advance on the JPPHA website, and meeting summaries will be posted at least a week before the next meeting. JPAC members can distribute the final meeting summaries and agendas freely.

**Documentation**

Peak Facilitation Group will provide detailed, non-attributory meeting summaries for each meeting. All participants will have a chance to review and edit these meeting summaries before they are finalized.

Jefferson Parkway Advisory Committee  
Protocols – FINAL 2.7.18

**Interaction with the Media and Other Decision Makers**

JPAC members may speak to decision makers and the press at their discretion. They are strongly encouraged to use caution and to clearly state that they only represent themselves, not the entire JPAC. Members will notify the group when they have spoken to a decision maker or a member of the press. If a JPAC member is contacted by the press and prefers not to speak to them, the member is encouraged to refer the press to Bill Ray. Heather Bergman, the facilitator, may present to the Board of Directors about the work of the group and will notify and discuss the presentation with the group in advance of her presentation. Ms. Bergman will not speak to the press.

**ATTACHMENT D:  
SUMMARIES OF ALL JPAC MEETINGS (INCLUDING  
PRESENTATION MATERIALS)**

**Jefferson Parkway Advisory Committee (JPAC)**  
**January 18, 2018**  
**Location: Apex Field House (5724 Oak Street, Arvada)**  
**Meeting Summary FINAL**

**ATTENDANCE**

*Participants:* Bini Abbott, Bill Branyan, Rebecca Kallio, Vera Ladtkow, Britta Nelson, Ian Owens, Bill Ray, Brent Smith, Randy Stafford, Jill-Ellyn Straus, Brett Vernon, Marc Wills.

*Facilitation:* Heather Bergman, Sam Haas

**ACTION ITEMS**

<b>Heather Bergman</b>	<ul style="list-style-type: none"> <li>• Bring the list of discussion topics that the group brainstormed to the next meeting, and the group will prioritize them.</li> <li>• Distribute the agenda for the JPPHA Board when she sends the next JPAC agenda.</li> <li>• Circulate the draft meeting summary and the draft group protocols. When these documents are finalized, they will become public documents and posted to the website.</li> <li>• Send out the contact information of JPAC members to the group.</li> </ul>
<b>Bill Ray</b>	<ul style="list-style-type: none"> <li>• At the next meeting, provide a comprehensive presentation to address many of the topics identified by the group.</li> <li>• Reach out to a project engineer to see if they can walk through some of the more technical aspects of the project.</li> <li>• Post a notice about the commencement of the JPAC with all meeting dates in local newsletters and reports. The entire meeting schedule will be posted on the JPPHA website.</li> </ul>
<b>JPAC Group Members</b>	<ul style="list-style-type: none"> <li>• Make sure that the rescheduled February meeting date of Tuesday, February 20, from 6:30 – 8:30 PM at the Apex Field House is on the calendar.</li> <li>• Review the draft meeting summary and protocols document and send revisions to Heather Bergman and Sam Haas.</li> </ul>

**WELCOME AND INTRODUCTIONS**

Participants introduced themselves. Members of the Jefferson Parkway Advisory Committee (JPAC) represent a broad spectrum of perspectives and geographic areas, including Candelas, Broomfield, Leyden Rock, Arvada, Ken Caryl, and Interlocken. Some of the selected participants offered law, engineering, or development expertise, and some represent personal interests in the Jefferson Parkway project.

**HISTORY AND STATUS OF THE JEFFERSON PARKWAY**

Bill Ray, the Interim Executive Director of the Jefferson Parkway Public Highway Authority (JPPHA), provided a brief overview of the history and current status of the Parkway.

- Regarding determined policy decisions, the Board is not open to debating whether to build the Jefferson Parkway. By way of brief history, Colorado Department of

Transportation (CDOT) engaged in a process from 2003 to 2008 that narrowed 73 original alternatives to one recommended alternative to connect the end of the Northwest Parkway to the end of C-470. Due to several issues, CDOT was unable to complete this process. In response, the JPPHA was created, and assumed goal of completing the ten-mile alternative alignment. JPPHA adopted the recommended alternative as the basis for its work. As an initial policy decision, the JPPHA Board decided to forego the use federal dollars for the project. Consequentially, JPPHA is not subject to federal rules, regulations, and processes.

- In terms of permitting, the project has gone through various processes to be included in the Denver plan and achieve conformity with regional and state air quality standards. The acquired right of way is consistent with the recommended alternative alignment of the CDOT process.
- More recently, JPPHA has gathered a team of professionals headed by Don Hunt, the recently retired Director of CDOT, to update the financial feasibility analysis. That analysis will be presented to the Board by the end of March. If the Board decides to proceed, the next phase will be to determine the best approach and the available public/private partnerships. The goal is to reach financial closure in August 2019, meaning the funding would be in place to immediately proceed to construction. To find a viable partner, the Board may choose to issue a request for information (RFI) or a Request for Qualifications (RFQ). This will allow them to gather a list of qualified teams. Those teams would describe in detail their particular approach to meeting certain standards and guidelines of construction, operations and maintenance prescribed by the JPPHA Board.
- JPPHA's negotiation with the prospective partner will largely be about risk assignment (i.e., what risks they are willing to bear). Because JPPHA would like the private partner to bear the bulk of the liability for design and construction, they have left most of the design decisions at a conceptual level. The project is currently at a two-percent conceptual level because the Board knows that the prospective partners will have different ideas about how the Parkway should be constructed. While the JPAC cannot be prescriptive, they may make recommendations on what they would like to see achieved in the design criteria.
- There is an unresolved issue with the Federal Aviation Administration (FAA) about the section of the Parkway that will pass through the runway protection zone.
- Approximately 70 percent of the Parkway will go through public land or Open Space. After construction, those lands will keep their designations. The only parcel of land that is not designated Open Space is the terminus at Highway 93, which is owned by the City of Arvada Utility Department. A reservoir will be built there eventually, but there will not be any private developments built there. The north end of the Parkway is owned by Jefferson County and is under a contract with Verve Development, LLC for airport-related development.
- The Parkway will have several intersections and interchanges. There will be an interchange built at Simms Street, which will be relocated from its current place. Going westbound, there will be an interchange where the Parkway runs parallel to Indiana about a half mile south of the SH 128/Indiana Street intersection. There will also be an interchange at Candelas Boulevard, but there will not be one at 96<sup>th</sup>

Avenue. There will be interchange on opening day at Highway 72 and eventually at Highway 93.

## **JPAC PROTOCOLS**

The group discussed and agreed to collaborative group protocols. Below are the key themes and outcomes of their discussion.

### **What is the Purpose of the Group?**

- The JPPHA Board supported the formation of the JPAC because they believe it is important to understand the various perspectives in the community. The Board appreciates that the selected group members reflect a wide range of viewpoints.
- The Board does not expect the group to come to an agreement about what should happen, but they would like to have continued access to the different community voices and hope that the group serves a two-way communication function.

*Agreement: The purpose of the JPAC is to learn together, provide feedback to the JPPHA Board, and discuss issues related to the Jefferson Parkway.*

### **What, if Any, Decision-Making Protocols Are Needed?**

- When the meeting summaries are written, they should reflect the different perspectives and clearly state that “some group members thought X, and some group members thought Y.”
- The JPPHA Board has made several firm decisions. For example, the Board has decided that the Parkway will be built and federal dollars will not be used. The alignment is also well-defined, as the required right-of-way is associated with the recommended alignment. The Board has also determined that the Parkway will go underneath the railroad. However, the height issues, the noise mitigation, and the trail alignments have not yet been determined.
- While the JPAC may not agree on all issues, it may be possible for the group to reach consensus on some issues. This would likely hold more weight with the Board.
- JPAC members had questions about the authority or influence of the group. The influence of the group may depend on the degree of agreement that is found.
- Consensus-based decision-making is not the same as unanimous decision-making. Reaching consensus is a process during which someone proposes an idea and works with the group to amend the preliminary idea so that the entire group can live with it. If someone cannot get on board with the idea, the group may choose to defer to voting, or the group may agree to simply reflect the different opinions in the final document.
- At any point during the discussion, a member may propose a group agreement. Agreements are then documented in the meeting summaries. The summaries include the different questions and points made by group members. Summaries will be written within a week and then circulated to the group. JPAC members may review and propose changes to the summary. The final summary is then distributed to the Board and posted on the website.

- If, by the end of the nine months, the JPAC decides that there would be value in continuing to meet, they may decide to propose extending the timeframe. The advantage of having a time-bound process is that it encourages the group to focus.
- JPAC members can determine what the group's final work product will be. Final work product options include a (or multiple) written report(s) or a (or multiple) presentation(s) to the Board.

*Agreement: On a case-by-case basis, the JPAC will decide how their agreements or lack thereof will be described to the Board.*

### **Who is the Primary Driver of What the Group Discusses?**

- The group should decide what is discussed. JPAC members will consider any recommendations by the Board about what they would like to see addressed.
- Group members should be able to ask for guest experts to come to a meeting and speak about topics of interest to the group.

*Agreement: The JPAC group members are the primary drivers of the topics that will be discussed and may request or invite experts to come present on specific topics about which they would like to learn more.*

### **Who Can Attend?**

- JPAC meetings are open to the public because public dollars are funding the group. The JPAC represents a range of community perspectives so group members may elect to hear from members of the public.
- If the group would like to hear public comments about a specific topic, the group should inform the facilitator before the meeting that they would like to set aside time during that meeting for public comment.
- Some members of the group had questions about whether they can appoint a proxy if they are unable to attend a meeting. Some group members thought that proxies should not be permitted because JPAC members will gain cumulative knowledge about the issues throughout the course of the meetings. Members were individually chosen to be on the JPAC for certain qualities or experience that they possessed. There are several JPAC members were chosen because they represented a specific entity or Board.
- JPPHA recruited JPAC members through a variety of platforms, such as NextDoor, Homeowners Associations, and city websites. A total of 25 people applied and 12 were chosen. The Board identified perspectives that they wanted to have represented on the JPAC and read every application. They wanted people along the spectrum of supportive to unsupportive of the Parkway.

*Agreements:*

- *Any member of the public can attend, but not participate in JPAC meetings. JPAC members may decide in advance of a meeting if they would like to reserve time for public comment. The group will specify how much time they would like set aside for public comment.*

- *Members of the public will be offered the opportunity to write their thoughts on a comment card.*
- *There will not be proxies allowed, but if someone who represents an organization or neighborhood is unable to attend a JPAC meeting, they may ask that someone else attend the meeting. That person would sit in the public seats to observe and take notes, but would not participate in the meeting.*

### **How Will Meetings Be Announced?**

- The group may choose to either proactively notify the public about upcoming meetings or provide passive notification (i.e., posting it on a website). The group would like to avoid disruptive participation from members of the public.
- It may be helpful for JPPHA staff to send out an announcement with all upcoming meetings in the newsletter that is sent to residents of unincorporated Jefferson County. Ian Owens will send Bill Ray the name of this newsletter.

*Agreement: JPPHA will post a notice about the commencement of the JPAC with all meeting dates in local newsletters and reports. The entire meeting schedule will be posted on the JPPHA website. The agenda will be posted a week before each meeting, and the meeting summaries will be posted once they have been finalized.*

### **What Are the Group's Preferences and Expectations About Members Talking to JPPHA Board Members, Council Members, Other Decision Makers, and/or the Media Outside of JPAC Meetings?**

- Members of the JPAC may decide whether they should individually be able to talk to the press and decision makers. Members of the press may attend the meetings and approach group members.
- Some members of the JPAC thought that they should not speak to the press outside of meetings, and some members would like the choice to speak to whomever they would like.
- If a member talks to the press, they should qualify that they are only speaking for themselves and that they do not reflect the opinion of the entire JPAC. If a member of the group has spoken to the press or a decision maker, they should inform the rest of the JPAC. If a member would prefer not to speak to the press, they may refer the press to Bill Ray.

### *Agreements:*

- *Members of the JPAC may speak to decision makers and the press at their discretion. They are strongly encouraged to use caution and to qualify that they only represent themselves.*
- *Members will notify the group when they have spoken to a decision maker (elected official or Board member) or member of the press.*
- *If a JPAC member is contacted by the press and prefers not to speak to them, they are encouraged to refer that person to Bill Ray.*
- *Members of the JPAC may circulate final meeting summaries.*

- *Heather Bergman, the facilitator, may present to the Board about the work of the group and will notify and discuss the presentation with the group beforehand.*
- *Heather Bergman will never speak to a member of the press.*

## **DISCUSSION TOPICS AND/OR QUESTIONS**

The group identified potential topics for discussion. Below are the topics the group identified.

- The group would like to discuss potential mitigation of light, sound, air quality, erosion/drainage, visual components, and the impact on the surrounding community.
- The group would like a detailed overview of the current status and plans of the Parkway. This would be a presentation by Bill Ray. Among other issues, they would like for him to talk about the number of people that will likely use the toll road, the connections, and the existing land uses.
- The group would like to discuss landscaping.
- The group would like to discuss options for multi-modal paths, both for bikers and pedestrians.
- The group would like an overview of potential non-Parkway improvements (i.e., the requests that JPPHA may be able to make of the partner for the opportunity to build the Parkway). Examples of potential improvements include sidewalks, drainage, etc.
- The group would like to discuss enhancements (e.g., lighting, landscapes, bridges, public art/murals, etc.).
- The group would like to consider the potential risk to public health of disturbing the soil along Indiana Street.
- The group would like to learn more about the mass transit aspect of the project.
- The group would like more information about safety (i.e., how people cross at the intersections and wildlife crossings).
- The group would like to discuss the existing trails (i.e., Rocky Mountain Greenway trails) and the potential pedestrian crossing locations. The group emphasized the importance of ensuring that there are several crossing points along the Parkway. They would like to see a pedestrian bridge at Leyden Rock.
- The group would like to discuss what should be recommended to be allowed or precluded in the corridor.
- The group would like to learn more about how to build the intersections to accommodate the expected growth, specifically issues related to ease of access.
- The group would like more information about the future of Indiana Street traffic. Specifically, they would like to ensure that people who refuse to pay the toll do not continue to re-route themselves through Indiana Street.

## **JPPHA BOARD MEETING ON JANUARY 18**

- During the meeting, the Board set Administrative Officers. David Jones is the Chair, and Libby Szabo is the Vice Chairman.
- The Board adopted a change order for the scope of work for HDR.

## **NEXT STEPS**

- At the next meeting, Bill Ray will provide a comprehensive presentation to address many of the topics identified by the group. The group will then decide what they would like to discuss at the third meeting.
- The next meeting has been rescheduled to Tuesday, February 20, from 6:30 – 8:30 PM at the Apex Field House.
- Bill Ray will reach out to a project engineer to see if they can present some of the more technical aspects of the project.
- JPPHA staff will post a notice about the commencement of the JPAC with all meeting dates in local newsletters and reports. The entire meeting schedule will be posted on the JPPHA website.
- Heather Bergman will bring the list of brainstormed topics, and the group will prioritize them.
- Heather Bergman will distribute the agenda for the JPPHA Board when she sends the next JPAC agenda.
- Heather Bergman will circulate the draft meeting summary and the draft group protocols. When these documents are finalized, they will become public documents and posted to the website.
- The names of JPAC members will be publicly available, but contact information will not be posted. Heather Bergman will send out the contact information of JPAC members to the group.

**Jefferson Parkway Advisory Committee (JPAC)  
February 20, 2017  
Apex Field House  
5724 Oak St, Arvada, CO 80002**

**Meeting Summary - FINAL**

**ATTENDANCE**

*Participants:* Bini Abbott, Bill Branyan, Rebecca Kallio, Vera Ladtkow, Britta Nelson, Chau Nguyen, Ian Owens, Bill Ray, Brent Smith, Randy Stafford, Jill-Ellyn Straus, Gerry Taylor, Brett Vernon, Marc Wills.

*Facilitation:* Heather Bergman, Sam Haas

**ACTION ITEMS**

<b>Brett Vernon</b>	Send Heather the information that was presented at the WestConnect open house.
<b>Bill Branyan</b>	Send Heather the plan for the Verve development.
<b>Bill Ray</b>	<ul style="list-style-type: none"> <li>• Bring the large map to the meeting.</li> <li>• Begin the effort of creating a master map with the following overlays: wildlife corridors, the Rocky Mountain Greenway trail and existing trails, parks (including the current air modeler's park), planned commercial and residential developments, medical facilities, Candelas Master Plan, Verve Master Plan, and the Pioneer Master Plan. Bring the new map to the meeting on March 15.</li> <li>• Make sure that all public documents are available on the website.</li> </ul>
<b>Heather Bergman, Chau Nguyen, Bill Ray, Randy Stafford</b>	Coordinate speakers/experts for the next three meetings and create a schedule.
<b>Heather Bergman</b>	Send the final meeting schedule with planned presentations to the entire Jefferson Parkway Advisory Committee (JPAC).

**JEFFERSON PARKWAY BACKGROUND AND TECHNICAL INFORMATION**

Bill Ray, Jefferson Parkway Public Highway Authority (JPPHA), and Chau Nguyen, HDR Engineering (HDR), provided a map-based presentation of details related to the Jefferson Parkway. HDR has been working with JPPHA through the Colorado Department of Transportation's (CDOT) 1601 process and access permit process, which requires JPPHA to outline the different access and connection points between the Jefferson Parkway and state highways. The map showed the roadway from Broomfield down to Golden. The summary is split into sections corresponding to geographic areas shown on the map. The first section is from State Highway 93 to State Highway 72; the second section is from State Highway 72 to Rocky Flats Wildlife Refuge; the third section is from Rocky Flats Wildlife Refuge to Broomfield. Below are the key themes from the presentation and group discussion.

## Process Overview

- As part of the CDOT 1601 and access approval process, JPPHA was required to conduct a traffic analysis (with a 2040 horizon year) and environmental documentation. While the environmental documentation was not required to comply with federal nexus standards, JPPHA did do some environmental assessment of existing conditions and potential impacts where the Parkway will connect to a state highway.
- The environmental assessment was a light version of what the federal nexus would require. In 2009, when the Transportation Commission created the system-wide feasibility study (the 1601 process), there were conditions. One condition was that there would be a National Environmental Policy Act (NEPA)-like review of documentation presented to CDOT where the Parkway will connect to a state highway.

## State Highway 93 to Highway 72

- At State Highway 93, HDR has proposed an opening day scenario with a signalized intersection and has proposed an alternate location for the air modeler park on the Pioneer gravel pit property.
- On opening day, the travelers southbound on the Parkway will reach the signal at State Highway 93 and the signal will allow them to take both left and right turns. In the future, there may be a grade-separated interchange. This future scenario will be dictated by traffic volume. JPPHA is working with CDOT to determine the triggers for implementation of this scenario.
- Driving north on the Jefferson Parkway, there will be a bridge over 82<sup>nd</sup> street which will be on average approximately 50 feet high.
- Continuing through Leyden Rock, the grading is already what it will be in the planned proposal.
- At Barbara Gulch, the Parkway will be higher, but on average it will be approximately 50 feet high.
- The Parkway will continue under the railroad and under State Highway 72. The railroad's grade will stay the same.

## Clarifying Questions

Participants asked clarifying questions about this section of the Parkway. Questions are indicated in italics, followed by the response.

*Will the Jefferson Parkway be at grade on plateaus?*

There will likely be some cut and fill. One of the goals of the Jefferson Parkway is to balance the earth work so that there does not have to be a lot of dirt hauled off or brought in. Ultimately, the chosen contractor will do their own design based on the design started by HDR.

*Will there be a park planned for this area?*

There was a master plan that presented many use options (shooting range, solar garden, regional composting facility, future water reservoir, prairie dog refuge, etc.), so there are many conceptual proposals, but it is still at the bubble diagram stage. Part of the charge of work for this area is to ensure connectivity between the north and south side (whether that is an underpass or an overpass).

*How do people living in Leyden Rock on the west side of the Jefferson Parkway get south on Indiana?*

They would drive under the bridge on Leyden Rock Road, which is inside the neighborhood.

*Are there local examples of highways that go through neighborhoods with as close proximity to a high number of houses as Jefferson Parkway is planned to go through Leyden Rock?*

E-470, east of I-25 and south of the airport runs close to many houses. E-470 is holding a similar conversation about impacts as it expands. The right of way for the Jefferson Parkway was already determined when Leyden Rock was zoned.

*Was noise, light, and air quality mitigation considered during the planning process through Leyden Rock?*

Landscaping and lighting design will occur later in the planning process. The air quality issue was addressed in 2010 when the Jefferson Parkway went through the Denver Regional Council of Government's (DRCOG) process to get included in the transportation plan. The Jefferson Parkway was required to comply with state air quality standards. A noise study was completed recently and information will be shared from that.

### **Highway 72 to Rocky Flats Wildlife Refuge**

- On opening day, there will be an interchange at State Highway 72 (two additional intersections with stop signs at the ramps, not traffic lights). This is the ultimate solution; JPPHA does not foresee any needed capacity improvements beyond those being proposed, though signals may be required in the future if traffic volumes dictate them. CDOT views projects like the Jefferson Parkway through a 25-year timeframe lens, and they want to make sure they understand what it will look like in 2040.
- There will be a bridge over Welton Reservoir, then Jefferson Parkway will go underneath Candelas Parkway. There will be a partial interchange there.
- The Jefferson Parkway will curve along near the new King Soopers and drop down, ending up on the west side of Indiana Street. As the Jefferson Parkway goes parallel to Indiana Street, there will be a bridge over Woman Creek and Walnut Creek.
- At the Indiana Street interchange, someone driving north on the Jefferson Parkway can get off at Indiana Street and can choose to go north or south on Indiana Street (there is a roundabout), and if someone is driving south on Indiana Street, they can get on the Jefferson Parkway to go south, but not north. This is called a three-quarter interchange. The only movement that the interchange does not accommodate is going south on Indiana Street to going north on the Jefferson Parkway.

### **Clarifying Questions**

Participants asked clarifying questions about this section of the Parkway. Questions are indicated in italics, followed by the response.

*What if traffic increases at the intersection of Jefferson Parkway and State Highway 93 before 2040?*

JPPHA has been talking with CDOT about this and are negotiating periodic check-ins (every three to five years) to review the conditions and data about the level of service. These check-ins may require additional traffic studies to determine if it is time to take steps.

*Are there any improvements planned south of the 93 intersection?*

The City of Arvada is a participant in a process that is trying to answer that question for the whole western half of the metro system (from Kipling Street at C-470 to Marshall Road in Boulder County to the north). The report does not call for a timeframe, but as opportunities arise over time, the WestConnect Coalition as a group has already pre-agreed to what the improvements will look like

(e.g., the number of lanes, bike/pedestrian operations, etc.). Improvements will be gradual. There is consensus about what should happen, but funding has not yet been allocated/determined.

*What is a cloverleaf interchange design?*

A cloverleaf interchange is a two-level interchange in which left turns are handled by ramp roads. Wadsworth and 6<sup>th</sup> avenue is an example of a classic cloverleaf. The interchange at State Highway 72 is a partial cloverleaf, and it is the ultimate design (it will not be built out in the future to be a full cloverleaf).

*Will there be stop signs for State Highway 72 at the intersection?*

No, there will just be stop signs for the ramps. The Jefferson Parkway will go under State Highway 72. At some point in the future, the intersection may require traffic signals.

*Will the Parkway go over the golf course in Interlocken?*

The Parkway will go between the golf course and the airport. At some point, Simms Street will be relocated and there will be a connection scenario. The Jefferson Parkway will go through Verve Innovation Park, which is Jefferson County land. The FedEx distribution center is in the Verve development.

*How far into Rocky Flats Wildlife Refuge will the Jefferson Parkway go?*

It will not go into Rocky Flats Wildlife Refuge. When the National Wildlife Refuge Act was adopted in 2001, Congress set aside 300 feet at the eastern edge of the Refuge for a future transportation corridor. The land is now in the ownership of JPPHA. The 300 feet was cleared as part of the original designation. Clean up of the Central Operable Unit (COU) occurred, then the National Wildlife Refuge Act was enacted and the responsibility for the property was transferred from the Department of Energy to the Department of the Interior. The US Fish and Wildlife Service's environmental impact statement was issued in the fall of 2004.

### **Rocky Mountain Wildlife Refuge to Broomfield**

- The Jefferson Parkway will go underneath the existing Simms Street and curve around in front of the runway. Simms Street will be relocated to line up with Eldorado. The existing Simms Street will become a service road for aviation use. The new Simms Street location is not projected for opening day, but it is an ongoing discussion between the JPPHA and Jefferson County. On opening day, there will be a signalized intersection at State Highway 128.
- The Jefferson Parkway will go southeast of the existing State Highway 128.

### **Clarifying Questions**

Participants asked clarifying questions about this section of the Parkway. Questions are indicated in italics, followed by the response.

*Is the intersection at Candelas Parkway a partial interchange?*

Yes, and if traffic volumes require an interchange at State Highway 128 and State Highway 93, the 1601 process will have to be completed. The interchange at State Highway 128 is a joint responsibility between the Northwest Parkway and Jefferson Parkway.

### **GENERAL QUESTIONS**

Participants asked general clarifying questions about the Jefferson Parkway. Questions are indicated in italics, followed by the response.

*Is JPPHA required to do traffic analysis and environmental impact analysis along the entire Jefferson Parkway, or just at the intersections of state highways?*

The traffic analysis was completed as part of the Northwest Corridor environmental impact statement (EIS). There was not a significant amount of analysis done for the Candelas Parkway interchange or the Indiana Street interchange because those areas are not connected to the state highway system.

*Do the proposed aesthetics of the Jefferson Parkway replicate the Northwest Parkway?*

The JPPHA Board expects the Jefferson Parkway to be aesthetically attractive, much like the Northwest Parkway.

*If the JPAC agreed to provide recommendations on landscaping, would that be acceptable?*

Yes, but there are no existing designs to use as a foundation, so their recommendations would not be based on existing ideas.

*Will the multimodal trails go parallel to the Parkway, even when there are bridges?*

Yes, but plans are not yet clear for where the Parkway goes under the railroad. There are several park planners who have given thought to this question but are not finished with their assessment. Multimodal trail designs should not preclude future transit opportunities (trails should allow for other transit opportunities to be incorporated within the 300-foot right of way). Therefore, multimodal trails may not be at the same plane (trails may be elevated).

*How wide is the right of way for the Jefferson Parkway?*

The right of way is 300 feet. The separation between the houses and the Parkway varies. There is a capacity to add two lanes to the Parkway if needed.

*What is the centerline separation that is obligated for the median?*

In the 300-foot right of way, the centerline is anywhere between 150 and 180 feet; 42 feet is the median. The lane widening would happen on the outside so that the median would be on the inside. The median may be a place for transit or snow in the future.

*When the additional outer lanes are added, are the interchanges designed to accommodate the additional lane?*

The ramps would have to be modified.

*How long will revenue be collected on the Jefferson Parkway?*

P3 concession is a classic project development model where the revenue risk sits entirely with the concessionaire. Because the private partners are required to operate, maintain, and replace the Jefferson Parkway, they will need the money to operate it on an ongoing basis.

*Has the JPPHA considered federal incentive programs?*

No, because the JPPHA Board made a policy decision not to pursue federal funding. If JPPHA decided to accept federal funding, the full process of environmental review would have to be completed. At the time when JPPHA decided to progress with the Jefferson Parkway, there was no federal funding available and they did not want to wait. They thought the private partner option would be a nimbler process. E-470 and the Northwest Parkway followed the same process.

*Does the map represent the current or projected number of houses in Candelas?*

It is based on Google Maps. Some existing development is noted on the map, but there has been some additional development since the map was published.

*Will there always be a local Indiana Street?*

Yes, but with the 300-foot transportation corridor right of way, the location of Indiana Street may change. It could be on the east side of the parkway if locating it there would require the least amount of dirt movement.

*Why is JPPHA concerned with the minimization of the movement of dirt during construction?*

It is standard practice in development to minimize the movement of dirt. The amount of dirt moved does equate to a dollar value. The highest costs of the Parkway are earthwork, pavement, and bridges. Due to the rolling hills along Indiana Street, it is expected that the cut and fill technique will be used heavily in the Indiana corridor.

*Will improvements be made at the same time?*

Yes.

*Will there be a tollbooth at every intersection?*

The location of the tolls will be determined by the concessionaire. Tollbooths are expensive, so it would likely be a system similar to the Northwest Parkway, E-470, or US Route 36.

*When will the Jefferson Parkway be connected to the Northwest Parkway, and when will the Northwest Parkway build out Interlocken Loop?*

When the Northwest Parkway concession and lease agreement was initially negotiated in 2003, there were two incentives that the concessionaire, Brisa, offered to encourage the development of the Jefferson Parkway. Building out Interlocken Loop is phase two of the Northwest Parkway process. There are intermediate steps that Broomfield can take to add to the existing Interlocken Loop. The first incentive was for a portion of the upfront payment for the long-term lease agreement to be placed into escrow, pending notice to proceed with the Jefferson Parkway by December 2018 or completion by 2021. The second incentive was a contractual obligation that Brisa put in the contract that required \$60 million to be spent to construct the Northwest Parkway extension to State Highway 128.

*Is JPPHA pursuing approval from the Federal Aviation Administration (FAA)?*

The property near the airport was purchased using no federal funds. The FAA is required designation of a runway protection zone, which runs from the runway to the golf course. Vertical development in the runway protection zone is restricted. The FAA would like to understand the environmental clearance process and safety implications of the Jefferson Parkway to ensure that it would not interfere with their objectives. There are over 50 national examples of trains and highways that run through runway protection zones. The runway protection zone starts at the surface of the runway and goes upward, not downward.

*Does JPPHA have any oil and gas constraints along the right of way?*

No.

*What are the dust suppression requirements during construction?*

JPPHA plans to follow standard CDOT dust mitigation procedures for any highway project during construction.

*Are there any towns/entities that oppose the Parkway?*

There were three major events that significantly moved the meter regarding opposition to the Jefferson Parkway. The first was the acquisition of section 16, which is a piece of land owned by the

Colorado State Land Board. The City of Boulder and the County of Boulder both wanted this land to remain open space. The Colorado State Land Board's mandate is to generate money for public education. In 2010, Jefferson County offered to purchase the land for \$5 million if the City of Boulder and Boulder County also paid \$2 million each and dropped their opposition to the proposed Jefferson Parkway. They did. The second occurred in 2013, when the City of Golden and CDOT reached an understanding for how Golden's transportation would be integrated into CDOT's master planning process. They signed a memorandum of understanding and the agreement stated that there will be further lane expansion on both State Highway 93 and US Route 6 through Golden in the future. The agreement also stated that there would be traffic counts that would trigger such lane expansion and an ongoing effort to have grade separations for certain streets in Golden. Golden was satisfied and no longer opposes the Jefferson Parkway. The third was a lawsuit filed by the City of Golden and the Town of Superior against the US Fish and Wildlife Service over the transfer of right-of-way to JPPHA, which Golden and Superior lost.

*What is the estimated cost of the Jefferson Parkway?*

The rough number, which is just a personal estimate by Bill Ray, is \$250 million (plus or minus 20 percent).

*Will the Jefferson Parkway use suspension structures?*

At Walnut Creek and Woman Creek, there will potentially be a box culvert.

*Has JPPHA researched indigenous peoples' historic trails?*

Yes, and the only trail that is near the projected Jefferson Parkway is the Arapahoe Teepee rings on the northwest end of the Pioneer Gravel property.

## **JEFFERSON PARKWAY ENVIRONMENTAL RELATED PERMITS AND APPROVALS**

Bill Ray provided a list of the permits for the Jefferson Parkway. He offered clarification for several of the permits/consultations.

- JPPHA has not started the permitting process with the railroad because the railroad has requested to see the detailed design. At some point, a JPPHA member will go to Omaha, Nebraska to meet with the railroad about the permitting process.
- The Army Corps of Engineers requires a Section 404 permit for compliance with the Clean Water Act. That has not been done yet. As part of the NEPA-like process completed by JPPHA, there was an initial resource agency meeting between JPPHA, Army Corps of Engineers, CPW, Colorado Department of Public Health and the Environment (CDPHE), and the US Fish and Wildlife Service. The nationwide permit is easier to obtain and is dependent on the number of acres of US waters impacted by the project. The 10-mile Jefferson Parkway design has minimal impact on US waters, so JPPHA plans to pursue a nationwide permit. Box culverts may be installed under the parkway at Walnut Creek and Woman Creek.

## **Clarifying Questions**

Participants asked clarifying questions about the permits and approvals. Questions are indicated in italics, followed by the response.

*Are all the documents related to the permits available for review?*

Bill Ray will check to confirm that all public documents are available online. The traffic study is called the Michael Baker study on the website. There was no document or report that was written to reflect the outcomes of the preliminary meeting with the Corps of Engineers. The access permit with CDOT and the environmental reports are all draft documents so are not publicly available.

*What are the concerns related to wildlife that CPW expressed during the initial permit meeting?*

CPW was primarily concerned with aquatic passage and less concerned with big game. They want to keep big game west of the Parkway so the animals do not get stuck in the residential/commercial areas. JPPHA has not reached the level of design that allows them to determine whether they are going to build a wildlife barrier. CPW requested that the design include ways for small mammals to cross but did not say there should be crossings for large mammals. JPPHA welcomes experts from CPW or another agency to speak at a future JPAC meeting about wildlife issues.

## **TOPICS**

Participants agreed that the following topics should be addressed during upcoming JPAC meetings.

- Wildlife corridors and risks associated with wildlife
- Public health issues related to Rocky Flats (what has been done, what questions remain)
- Snow mitigation
- Lighting mitigation, sound buffering, results of the noise mitigation study, visual mitigation
- Operations and maintenance related to soil containment (landscaping/windbreaks)
- Permeability and crossings for bikes and pedestrians
- Cost feasibility of the Jefferson Parkway
- Off-Parkway improvements that the community would like to see be done by the contractor (trails, bikeways, etc.).

## **Timeline**

Participants agreed that the next three meetings (March, April, and May) should be dedicated to learning about the topics listed above. While this timeline is subject to change depending on the availability of speakers/experts, below is a rough outline. The group agreed that they should prioritize learning sessions on public health issues, wildlife migration corridors, and cost feasibility. Heather Bergman, Bill Ray, and Randy Stafford will work together to reach out to potential expert speakers and put together a final schedule/sequence for the next three meetings.

### *March Meeting*

- Invite a panel of experts to speak about public health issues related to the development of the Jefferson Parkway.
- If public health speakers are not available for the March meeting, this topic can be pushed to the April meeting and there will be an update on the sound study. If the sound study speakers are unavailable, there will be expert presentations on wildlife corridors and risks associated with wildlife.

### *April Meeting*

- There will be a presentation of the cost feasibility of the Parkway (this information is pending until after the Board meeting during the first week of April).
- Depending on the March meeting agenda, wildlife experts, public health experts, or sound study experts will speak at the April meeting. If the public health meeting is bumped to April, the cost feasibility, wildlife presentations, and sound study presentation will wait until May.

### *May Meeting*

- The agenda for the May meeting will be determined by the plan for the March and April meetings.

- If the cost feasibility, wildlife presentations, and sound study presentations have occurred, the May meeting will address public health issues.

*June Meeting*

- The Advisory Committee will explore options and begin a visioning effort related to mitigation (sound, visual, light) and off-Parkway improvements (trails, landscaping, etc.).
- The results of the sound study are separate from issues related to visual enhancements/barriers.

**Jefferson Parkway Advisory Committee (JPAC)  
 March 15, 2018  
 Apex Field House  
 Meeting Summary - FINAL**

*Attendance:* Bini Abbott, Bill Branyon, Vera Ladkow, Britta Nelson, Bill Ray, Brent Smith, Randy Stafford, Jill Straus, Gerry Taylor, Brett Vernon, and Marc Wills

*Guest Speakers:* Lee Kunselman, Jordan Likes, Karol Miodonski, and Francesca Tordonato,

*Facilitation:* Heather Bergman and Sam Haas

<b>Peak Facilitation</b>	<ul style="list-style-type: none"> <li>• Send Jefferson Parkway Advisory Committee (JPAC) members the meeting summary from the September noise study community meeting.</li> <li>• Bring comment cards for members of the public to the next two JPAC meetings.</li> </ul>
<b>Bill Ray</b>	<ul style="list-style-type: none"> <li>• Work with the Jefferson Parkway Public Highway Authority Board and Atkins consultants to determine whether it is feasible to ask Atkins to reconsider certain areas of the sound study to account for the newly-constructed berms, as this information could impact the findings. Also determine if it is within budget and scope for Atkins to disaggregate the noise decibel results for each receiver so that it is clear which receivers have higher thresholds.</li> <li>• Invite a second speaker from Colorado Department of Public Health and Environment (CDPHE) to come to the May JPAC meeting.</li> <li>• Continue to work on adding the requested layers to the map, or create several maps with the different layers.</li> <li>• Add the map displayed during the JPAC meeting to the website.</li> </ul>

**NOISE STUDY PRESENTATION**

Lee Kunselman and Karol Miodonski from Atkins Engineering presented the results from the noise study that Atkins completed for the Jefferson Parkway Public Highway Authority (JPPHA) Board. Atkins Engineering was contracted to examine the interchange design for Highway 72 and the noise analysis pertaining to Leyden Rock and associated neighborhoods. Below are the highlights from their presentation.

- Noise is identified as unwanted or undesirable sound. Traffic noise comes from vehicles (cars, trucks, etc.). There are several sources of noise, including the tire/road interface, engine noise, and exhaust pipes. Sound travels in waves, so the location of the source of the noise matters, because it will impact how the sound travels to the receiver.
- Traffic noise analysis is a federal requirement when federal funds are involved. Atkins used Colorado Department of Transportation’s (CDOT) standard practices throughout their analysis of the Jefferson Parkway and used a tool designed by the Federal Highway Administration (FHWA) called the Traffic Noise Model (Version 2.5).
- The first step of the analysis is to evaluate the extent of the project. For the Jefferson Parkway, Atkins considered the alignment (with Indiana on the east and Highway 93 on the west). The noise boundary extends 500 feet beyond the edge of the roadway on each side.
- The second step is to look at all the receivers (e.g., houses, commercial businesses, etc.). There are a few receivers in Candelas. Any lot that is planned or permitted is included in the

study. There are quite a few residential receivers in Leyden Rock. The different receiving points make up the basis of the noise model.

- The third step is to add all current roads, topography, and elevation into the existing conditions model. To verify the existing conditions, Atkins consultants pick a few representative locations to validate the model and count traffic to collect decibel results. The results are then put into the model. Noise monitoring is not done during peak traffic hours, because noise levels are lower in stop-and-go traffic. The goal is to capture the sound levels when traffic is free flowing. Any results that are within three decibels of existing conditions are considered validated. The field readings were taken at locations that would be close to the Jefferson Parkway alignment.
- Once the existing conditions model has been validated, Atkins builds future models for 2020 and 2040 by forecasting traffic volumes. The future model considers the impact of new ramps and uses existing traffic on local roads like Indiana to project growth rates.
- There are different activity thresholds for different types of areas (i.e., residential areas have a different threshold than commercial areas). For residential areas, 66 decibels is the threshold at which conversation can be interrupted. Any noise above 66 decibels is considered an impact. Also, an increase from existing levels of 10 decibels or more is considered an impact.
- Quiet urban daytime is approximately 50 decibels; freeway traffic is approximately 60 decibels; vacuum cleaners are 70 decibels; accelerating motorcycles are 110 decibels. The map shows which receivers were impacted and which were not.
- Examples of sound buffers that have been used in other areas include natural buffers (trees), retaining walls (concrete block walls, Plexiglas walls), or earth berms.

### **Clarifying Questions**

Members of the JPAC asked clarifying questions about the noise analysis. Questions are indicated in italics, followed by the response.

*Did Atkins conduct the noise analysis north of 96<sup>th</sup> Avenue?*

Atkins did not extend the study, because there were no receivers north of Highway 128. There are some industrial sites, but those are not included as receivers because JPPHA's commitment was to study the neighborhoods.

*How was the study area determined?*

The study area was based on the residential areas adjacent to the Jefferson Parkway.

*Does sound rise like heat?*

Sound travels in waves and moves outward in a sphere shape, like the ripples in water when a stone is dropped. Noise will go wherever it can from the source. For example, if someone were to stand in front of a house (looking at the cars), they would be directly impacted by the noise, but if they were to stand behind the house, the noise would be blocked.

*Does Atkins' future model account for the Northwest Parkway?*

Yes, the traffic study uses a regional model to project growth and includes the potential distribution of traffic from the new connections.

*What were the readings for the existing conditions?*

The lowest reading was 39 decibels. There were some readings in the 40-decibel range, and several at 55 decibels. The field readings represent the average noise level at peak travel times (not rush

hour). Measuring at non-peak hours is the standard. Measuring noise levels at 5:00 PM would result in lower noise levels, because the traffic is not free flowing.

*What are the inputs to the model, besides topography, traffic flows, etc.?*

Elevation, roadways (including a measurement of each lane), barriers (including houses) are all considered. The model can also add walls that act as sound buffers.

*When was the sound study conducted?*

The sound study was conducted last year, and the traffic projections were for 2020 and 2040.

*Would it be possible to show the sound study results for individual receivers?*

It would be possible to create a graphic representation of the results, specific to the individual receivers.

*Does the model measure the current forms of noise mitigation between the roadway and the homes, such as newly constructed berms?*

There are several retaining walls that were included in the model, but the topography that was used in the model was over a decade old and there may be some recently added berms that are not in the model. The model does not represent the berms. Bill Ray will work with the JPPHA Board and Atkins consultants to determine whether it is feasible to ask Atkins to reconsider certain areas of the sound study to account for the newly constructed berms, as this information could impact the findings.

*Do sound buffers both reflect noise and prevent noise from traveling beyond them?*

Reflectivity is a factor worth considering. Concrete walls have a certain sound absorption level, and there are some guidelines about how much sound should be absorbed. If houses are below the buffer, the noise would reflect above the buffer. The placement of the barrier should either be close to the highway or close to the receiver, not in the middle.

*What are the projected sound levels along the Jefferson Parkway alignment for the houses adjacent to the roadway and what mitigation could be done to lessen the impacts of the Jefferson Parkway?*

Some of the receivers will be more impacted by sound than others. However, there are very few receivers that are projected to be above the 66-decibel threshold.

*How often do consultants validate the model against the results post-development?*

There are no requirements to assess and verify the noise levels after the completion of the development.

*Does the model account for the sound from use of jake brakes, which are used by trucks during wet conditions?*

No, that is not part of the model. The model considers typical conditions with the understanding that rain is not a long-term condition. However, municipalities may consider creating a local ordinance that restricts trucks from braking in certain areas.

*Would the JPPHA be open to stipulating a "no brake" zone?*

It depends on how JPPHA decides to do enforcement. It is also worth noting that the Jefferson Parkway will likely have less truck use because it is a toll road.

*Does the model account for impacts from wind?*

It does not, but the field analysis considers wind. The people conducting the analysis use a wind monitor. The threshold for wind is 10 miles per hour (mph). Measurement is not taken if wind is above 10 mph.

*Have noise mitigation techniques for the Jefferson Parkway been decided yet?*

No, noise mitigation techniques have not been decided. If the JPAC wanted to make recommendations, that is within the group's purview.

## **WILDLIFE CROSSING AND SAFETY**

Francesca Tordonato from CDOT and Jordan Likes from Colorado Parks and Wildlife (CPW) discussed wildlife crossing and safety regarding the Jefferson Parkway. Ms. Tordonato was speaking as a private citizen with relevant expertise, not on behalf of CDOT. Mr. Likes was speaking in professional capacity as CPW representative.

- In the area surrounding the Jefferson Parkway near Rocky Flats, there are several big wildlife species that are commonly sighted. These include elk, mule deer, white-tailed deer, mountain lion (occasionally), and recently there have been more moose sightings.
- Along the southern end of the Jefferson Parkway, the primary concern is deer crossings. There are ways to mitigate crossings, and the options vary depending on how much money is invested. The southern end of the Jefferson Parkway is not as big a concern as the northern portion near Rocky Flats.
- The projected initial traffic volume for the Jefferson Parkway is approximately 10,000 vehicles per day. The area with the highest animal accidents would likely be near Rocky Flats. CPW would like some species to be able to cross and would like others to be prevented from crossing if possible, as there would not be appropriate habitat for them on the other side. CPW would prefer that elk do not make it across Indiana Street to the east side. CPW would like to allow deer and small mammals (coyotes, raccoons, skunks, etc.) to cross. The type of crossing design helps filter the species that cross. For example, elk will use an underpass if it is large enough, and deer will use it if it is smaller.
- CPW's recommendation is to create fencing along the highway with jump-outs (so that animals do not get stuck along the highway). CPW would not recommend an underpass unless it is suitable for deer and small mammals. Overpasses are preferred where the topography is suitable. There are two wildlife-dedicated overpasses in Colorado. They are very expensive to build.
- In some locations where there are projected mobility challenges for smaller mammals, it may be beneficial to open up the drainages. It would be important to consider the drainage patterns and try to provide a crossing appropriate for deer along the stretch of Indiana from Highway 96 up to Highway 128 (roughly 2.5 miles). Best practices indicate that there should be one crossing for every mile of fencing.
- On Highway 93, there are wildlife on the east side and Boulder County Open Space on the west side. Currently, there is no wildlife fencing along the stretch that is most impacted, and CDOT is doing a wildlife connectivity study in conjunction with Boulder County and CPW. When planning and designing crossings, it is important to consider the target species and the roadway template. On I-25, CDOT is planning a series of crossings south of Larkspur where elk is the target species, so the structures will be 14 feet high. For areas where mule deer are the target species, the structure will be smaller (typically a minimum of 10 to 12 feet high and 40 to 50 feet wide).
- Small mammals are not a huge concern, because they typically do not pose a threat to public safety.

- Wildlife mitigation along C-470 was completed in the 1980's, and there are fences with one-way gates. One-way gates are spring-loaded and are often difficult for the animals to push. Animals with antlers often get stuck in the fencing. One-way gates have since been found to be ineffective, especially if the animals have antlers. There is an effort to replace the one-way gates with urban escape ramps and jump-outs with guide rails along C-470. However, jump-outs should not be viewed as a form of mitigation; they are an emergency opportunity for animals to get off the roadway.
- If there is a resource on the other side of the roadway that the animal is desperate to get to, they may use culverts. If there is fencing the entire length of the roadway, the animal will look for an opening. Without an opening, there will typically be a hotspot at the end of the fence. If there is no fencing, animals will cross wherever they want.

### **Clarifying Questions**

Participants asked clarifying questions about wildlife crossings and safety. Questions are indicated in italics, followed by the response.

*What happens to the elk if there is no place for them to cross?*

If there is no crossing and the fence is maintained, the elk would follow the fence looking for an opening and when they are unable to find one, they will turn back into Rocky Flats and toward Highway 128. That is the desired outcome for elk in this area.

*How many mule deer collisions are there in this area?*

Jefferson County Road and Bridge has an estimated count.

*Do roads like Jefferson Parkway typically have fencing on either side?*

The amount of fencing often depends on the location and possible conflicts with wildlife. Standard eight-foot deer barrier fencing precludes most species from crossing, which has safety benefits but also impacts migration patterns. Crossing structures should be considered at intersections that cross key migration or seasonal movement corridors.

*Are there any potential migration corridors intersecting with the Jefferson Parkway?*

Walnut Creek and Woman Creek may be potential migration corridors, but they are also designated as critical habitat for the Preble's jumping mouse, so any work in that vicinity would require extensive National Environmental Policy Act (NEPA) analysis.

*Are there any locations planned for trails or overpasses?*

A coalition of local governments has been working together to plan the section of the Greenway Trail that aligns with the Jefferson Parkway. Jefferson County Open Space has taken the lead and is creating a conceptual design for a pedestrian overpass. It is not yet clear what will/will not be permitted on those trails.

*Do elk/deer have suitable habitat west of Highway 93?*

Elk and deer can survive in an urbanized environment if there is appropriate grass cover. Rocky Flats is the limit of the elk habitat. The elk herd that uses Rocky Flats is comprised of about 150 elk. Antelope need a large track of land to move, and fencing is often detrimental to their movement.

*Would a pedestrian overpass or underpass be preferable for reducing unwanted animal crossings?*

A pedestrian overpass would be better.

## **NEXT STEPS**

- At the last meeting, JPAC members identified priority topics and permitted Randy Stafford, Bill Ray, and Heather Bergman to plan the agendas for the March, April, and May meetings. In April, Bill Ray will present the traffic and revenue results from the JPPHA board meeting. In May, Randy Stafford and Bill Ray have invited several experts to speak about public health implications related to Rocky Flats.
- The format of the meeting will be as follows: One expert will present, and JPAC members will ask clarifying questions of them; then another expert will present, and JPAC members will ask clarifying questions of them. It will not be a debate, simply an information exchange. There will be some discussion amongst JPAC members, but no discussion between the speakers. There will be one speaker from each end of the spectrum for both issues related to contamination and issues related to health (a total of four speakers). Bill will reach out to another speaker from Colorado Department of Public Health and Environment (possibly Mike Van Dyke) to see if they are available for the May meeting.
- As directed by the JPAC members, there will not be public comment during the April and May meetings. JPAC members were chosen to represent the diverse range of community perspectives. Heather Bergman will bring comment cards to the April and May meetings for members of the public to fill out.
- Bill Ray will continue to work on adding the requested layers to the Jefferson Parkway map, or he will create several maps with the different layers. Bill Ray will add the map displayed during the JPAC meeting to the website.

**Jefferson Parkway Advisory Committee (JPAC)**  
**May 17, 2018**  
**Meeting Summary - FINAL**  
**Apex Field House (5724 Oak Street, Arvada, CO 80002)**

**PARTICIPATION**

*Participants:* Bini Abbott, Bill Branyon, Ian Owens, Rebecca Kallio, Britta Nelson, Jill Straus, Bill Ray, Randy Stafford, Jerry Taylor, Brett Vernon, Marc Wills

*Speakers:* Kristen Iversen, Jon Lipsky, Lindsay Masters, Carl Spreng, Mike VanDyke,

*Facilitation:* Heather Bergman, Sam Haas

**MEETING PURPOSE**

- This meeting was video recorded, and the JPAC Committee agreed that the recording would not be shared or posted unless agreed upon by the Committee.
- Each speaker was allotted 25 minutes. They were given the opportunity to choose to present for as long as they would like within that 25 minutes, and the remaining time was provided to JPAC Committee members to ask clarifying questions. Debate or engagement amongst the presenters was discouraged. Any written public comments are included in the meeting summary.
- Please note, this meeting summary reflects the perspectives articulated by the individual panelists and individual JPAC members. The perspectives vary and not everyone agrees with all the statements that were said.

**LINDSAY MASTERS PRESENTATION**

Lindsay Masters, Environmental Protection Specialist for Colorado Department of Public Health and Environment's (CDPHE) Hazardous Waste Corrective Action Unit, provided information on the background of Rocky Flats and the legal and scientific history of the site.

- The present Rocky Flats site is south of Boulder and north of Arvada and Denver. During the Cold War, the US was creating a buildup of global warheads, and Rocky Flats was a plutonium pit production site for nuclear weapons. It was a large facility, and the "protected area" was where the plutonium production occurred. Rocky Flats was one of the worst environmental sites in the country. A lot of drums were stored on the mesa and leached plutonium into the surface soil.
- The environmental law history of the Rocky Flats Plant is complex. After World War II, the Atomic Energy Act was passed, which created the Atomic Energy Commission (now the US Department of Energy). In 1951, the Rocky Flats plant was constructed. From 1952 to 1989, the plant produced plutonium triggers during the Cold War; there were environmental releases on- and off-site and two major fires. In 1976, the Resource Conservation and Recovery Act (RCRA) was passed (called the "cradle to grave" regulation for hazardous waste). In 1980, the Comprehensive Environmental Response and Liability Act (CERCLA or "Superfund") was passed. This was a retroactive law, meaning that parties could be held responsible for past acts.

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- In 1983, the Environmental Protection Agency (EPA) created the first National Priorities List (NPL). In 1986, several amendments were made to CERCLA. Section 120 amendments required federal facilities to comply in the same manner as other non-governmental entities and required federal facilities on the NPL to have an interagency agreement with the EPA (and the state, if the state so desired).
- In 1986, an interagency compliance agreement was reached for Rocky Flats with the goal of bringing Plant operations into compliance. Plant operations slowed in 1988, and in 1989 the EPA and FBI raided Rocky Flats and the site was added to the NPL.
- In 1991, a new interagency agreement was created to reflect the change from a compliance mission to a plan to close and clean up the facility. In 1992, the operator got an \$18.5 million fine for environmental crimes. In the early 1990's, federal and state governments entered environmental battles and many questions got answered, specifically around federal and state immunity and state authority.
- From 1991 to 2005, there was a CERCLA environmental investigation, sampling, and cleanup of Rocky Flats. In 1996, the cleanup model evolved and the Rocky Flats Cleanup Agreement (RFCA) was negotiated. By 2001, the cleanup had progressed and Congress passed the Rocky Flats National Wildlife Refuge Act, defining the end use of the lands that met applicable standards and action levels.
- Physical closure of the site occurred in 2005. The Corrective Action Decision/Record of Decision was approved in 2006, which outlined the site remedy for two sections: the Central Operable Unit (COU) and the Peripheral Operable Unit (POU). The term "operable unit" is used to break down large sites into manageable pieces for investigation.
- The cleanup took over ten years and cost \$7 billion. About 800 structures were deactivated, decommissioned, and demolished. 421 potentially contaminated areas were investigated, and 360 were remediated. It was the largest CERCLA cleanup at the time. Refuge and offsite areas were also investigated. Arsenic, benzo(a) pyrene, dioxin, plutonium, and vanadium were identified as contaminants of concern. The activities were overseen by the Department of Energy (DOE), EPA, CDPHE, and the Defense Nuclear Facilities Safety Board (DNFSB).
- During the cleanup, drums were removed, contaminated soil was excavated (within a tent in some cases) and the waste was packaged and handled and shipped off site to a variety of different disposal sites across the country in the DOE Complex. The COU is still DOE retained, and the POU includes the wildlife refuge, part of which became the right of way for the Jefferson Parkway.
- Following the closure of the site in 2006, a post-closure agreement was created in 2007 (the Rocky Flats Legacy Management Agreement). In 2007, the EPA de-listed the POU from the NPL and it was transferred to the US Fish and Wildlife Service. The COU is subject to mandatory five-year reviews of the CERCLA remedy, which includes analysis of toxicity factors and exposure assumptions to determine whether the remedy was functioning as intended. These reviews have found that the remedy is still protective of human health and the environment. There is ongoing monitoring and maintenance of the remedy, including reviews, site visits, and groundwater treatment systems.

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- CDPHE is bound by laws and regulations. These laws, regulations and policies govern how CDPHE applies numerical standards, a process which is not unique to Rocky Flats. Remediation of Rocky Flats met applicable legal and regulatory requirements. The COU was remediated to the CERCLA risk range, per regulations. The Refuge/right of way was not remediated because detected levels were so low the land did not meet the threshold for action. Environmental regulatory standards are health-based, not background based.

### **CARL SPRENG PRESENTATION**

Carl Spreng, representative from CDPHE's Hazardous Materials and Waste Management Division, presented on the health-based environmental standards and risk calculations.

- The EPA's Integrated Risk Information System (IRIS) looks at toxicology and chemistry regarding various chemicals' human health effects and provides assessments of hazards that are then used in decision-making and site risk assessments nationwide.
- Risk assessments can consider different exposure scenarios, doses, adult and child biology, animal biology, chemical hazards, and behaviors.
- Data and records related to the Rocky Flats cleanup is available online on the DOE, CDPHE, and EPA websites. Older records are hard copy and are being transferred into the electronic database.
- There is on- and off-site residual contamination within the regulatory limits. Agencies continue to monitor and remedy the site. There have never been conditions to justify a CDPHE penalty under RFLMA. Calculated radioactivity levels are well below regulatory standards. The average residual plutonium contamination in the surface soil in the COU is 2.3 picocuries (pCi) per gram, which equates to less than one mrem (the dose) per year and a less than one in a million risk of excess cancer.
- The state radioactivity standard placed a dose limit of 25 mrem/year above background, and the calculated doses for plutonium exposure in the most contaminated area of Rocky Flats is .3 mrem/year for an adult refuge worker, .2 mrem/year for a child visitor, and .7 mrem/year for an adult visitor. In terms of total effective dose equivalents (TEDEs), eating one banana can lead to a .01 mrem, an airplane flight from Denver to Juneau, AK can result in 1 mrem. The Chernobyl accident resulted in a high dose of more than 80,000 mrem.
- The exposure pathways that were considered in the risk assessment were inhalation, ingestion, dermal absorption, injection, and external irradiation. For plutonium, the primary exposure pathways are inhalation and ingestion. The risk assessment assumed that the wildlife refuge workers worked approximately 230 days/year for 18.7 years and that the wildlife refuge visitor visited 100 times per year for an average of 2.5 hours per visit, and had a soil ingestion rate of 60 mg/day.
- Cancer is possible, but not probable (small risk) if exposures to ionizing radiation are small. Regulations provide limits below which risk/dose is negligible. The linear no-threshold dose model is linear and assumes that the higher the dose, the greater the effects. The risk of getting cancer from inhaling one particle of plutonium is not

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zero, but it is very small. Plutonium is a global contaminant; it is everywhere and millions of dust particles contaminated with plutonium must be inhaled to result in significant radiation doses.

- Rocky Flats is very well studied. The CERCLA environmental investigation produced a lot of data. Informed decisions were made based on employee interviews, records, and process knowledge. Thousands of samples (air, soil, groundwater, surface water, and sediment) were collected on- and off-site.
- To address the question of whether Jefferson Parkway construction would release harmful levels of plutonium, it is important to understand that the 300-foot right of way along Indiana was granted in the Refuge Act. The environmental investigation concluded that both the Refuge area and the off-site areas were suitable for unlimited use and unrestricted exposure. A lot of soil sampling took place in the right-of way. The maximum right of way plutonium concentration was 8.8 pCi/gram and the average right of way plutonium concentration was 1.4 pCi/gram. Third-party sampling east of the right of way agrees with the DOE sampling results.
- Federal standards for airborne radionuclide emissions set a 10 millirem/year dose limit. Colorado radiation standards limit the public to a total annual dose above background of 25 millirem/year. Continuous surface water measurement at Rocky Flats is measured against an extremely sensitive/conservative standard of .15 pCi/gram.

### **Clarifying Questions**

Participants asked clarifying questions about Carl Spreng's presentation. Questions are indicated in italics, followed by the response.

*How exactly has the ongoing soil testing been done?*

Trenches were studied inch by inch and thousands of surface soil samples were collected and sent off to labs. Surface soil samples are collected with stainless steel trowels. Sub-surface samples range from six inches deep to 50 feet deep. Those samples were collected from bore holes or by trenching with a backhoe.

*If there were contaminants at Rocky Flats, how would you expect them to travel, and where would you expect to find them?*

It would depend on the contaminant. Some contaminants are mobile. The Actinide Migration Panel (which was comprised of experts from the School of Mines and other universities as well as national labs) discovered that, as soon as plutonium is in the environment, it latches onto oxygen and attaches to soil particles. It travels as those soil particles travel. It does not migrate in the subsurface and is essentially insoluble. Uranium does travel in the subsurface, which is why there are groundwater wells to look under the surface soil. Major weather events may mobilize the remaining contaminants.

*What were the results of the monitoring from the construction occurring now between 86<sup>th</sup> and 91<sup>st</sup> on Indiana Street?*

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No monitoring has been done specifically for this construction; CDPHE does not have requirements that would drive that. Previous off-site sampling does indicate that plutonium concentrations are at or below background in this area. The average samples within the 300-foot right of way are also well below levels of concern. There is a statute from 1972 that requires any soil that measures above 1 pCi/gram to be assessed by the radiation control program at CDPHE. They have been notified about the construction, and if they required anything it would be dust suppression. The levels are well below the trigger points for evaluation.

Conversely, according to panelist Jon Lipsky, the Jefferson County land-use development regulations include a list of regulations that should be followed, but Candelas did not follow it and Three Creeks School did not follow it. Broomfield has no radiation guidelines so they default to the State's guidelines.

### **MICHAEL VAN DYKE PRESENTATION**

Mike Van Dyke, Branch Chief of the Environmental Epidemiology, Occupational Health, and Toxicology (EEOHT) branch at CDPHE, provided an overview of CDPHE's cancer-related studies conducted at Rocky Flats.

- Men have a one in three lifetime risk of getting cancer, and women have a one in four lifetime risk. Cancer is not a single disease; it is a group of 100 different diseases. It is the second leading cause of death in Colorado.
- The risk factors are different for each kind of cancer but include old age, family history/genetics, tobacco use, sun exposure, hormones, alcohol use, infections, diet, obesity, and lack of physical activity. Relatively few cancers are definitively linked to environmental or occupational exposures. Risk depends on the amount and duration of exposure, and it is not easy to separate chemical exposure risk from other risk factors.
- When studying cancer, the goal is to consider a specific area (in this case, Rocky Flats), and compare it to another area (in this case, the Denver metro area) to determine whether the people living in the neighborhoods near Rocky Flats have a higher risk of getting cancer.
- The original Rocky Flats Cancer Registry study looked at data from between 1980 – 1989, and the second study looked at data from 1990 – 2014. The studies compared incidence of cancer in the areas surrounding Rocky Flats to the remainder of the Denver metro area. The study analyzed ten cancer types (esophagus, bone, stomach, leukemia, colon/rectum, lymphoma, liver, brain/nervous system, lung, prostate). These cancers were selected because they were potentially tied to plutonium exposure or recommended for study by Health Advisory Panel members.
- The 1998 report found that 186 out of the 190 cancer rations tested indicated no significant difference from the remainder of the metro area. There were four significant findings: lung cancer was elevated in Adams-West and Northglenn/Thornton; colorectal cancer was elevated among males in Wheatridge, and brain/CNS cancer was elevated among females in Arvada. The 2016 report found no differences for stomach, liver, bone, leukemia, lymphoma, and

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brain/central nervous system cancers, but resulted in eight significant findings: lung cancer was elevated in Arvada, Adams-West, Adams-Clear Creek Valley; Colorectal cancer was elevated among males in Adams-West, Adams-Clear Creek Valley (these neighborhoods also have a higher rate of smokers than the metro area); esophagus cancer was elevated among females in Golden; prostate cancer was elevated in Boulder County (which makes sense because more affluent populations tend to screen better).

- In 2017, a supplement study was done to assess thyroid and “rare” cancers. There were no significant differences except a higher-than-expected percentage of males in Wheatridge with pancreatic cancers.
- The findings indicate no clear trend of elevated cancer incidence that would suggest environmental exposure. Most of the elevated cancer findings (lung, colorectal, esophagus) have tobacco use as a major risk factor. Most of these cases had a history of tobacco use, and the locations of these elevated cancer incidence had higher rates of tobacco use compared to the rest of the metro area. The studies do not suggest potential plutonium exposure or living in the vicinity of Rocky Flats has significantly increased the risk of cancer for residents.

### **Clarifying questions**

Participants asked clarifying questions about CDPHE’s presentations. Questions are indicated in italics, followed by the response.

*How long does it take for symptoms of plutonium-related cancers take to show up?*

In general, cancer is a disease of long latency (10-20 years out).

*Why did CDPHE’s studies include regional statistical data for areas that are not close to Rocky Flats (e.g., Boulder)?*

The Health Advisory Council decided what areas to study. They were looking at all the surrounding neighborhoods.

*Did the interviewers of the cancer study ask the subjects how long they had lived in that area?*

To be clear, cancer study subjects were not interviewed. This information was collected from the Colorado Central Cancer Registry. A weakness of these types of studies is that a cancer gets reported to the registry based on the current address. People who used to live somewhere else who now live in the study area get reported, and people who used to live in the study area but now live elsewhere do not get reported.

*Who was the liable party for the environmental crimes fine?*

The fine was paid by the contractor, Rockwell. From 1977 forward, DOE had control of the site. DOE was responsible for the cleanup. The Federal Facilities Act was passed in 1992. It amended RCRA to waive federal immunity from state penalties. CERCLA Section 120 says that federal government agencies are held to same standards as other entities.

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*Have there been other studies on non-cancerous exposure and diseases?*

There have been studies on workers, but not on residents.

*What if the regulatory limits are wrong and are not conservative enough?*

The standards are based on decades of studies. The mandatory 5-year reviews look for any changes to standards that are based on those studies.

*Does the settlement area for the class action lawsuit (Cook v Rockwell) overlap as the study area from the CDPHE cancer studies?*

No, the area included in the class action lawsuit was based on the 1970 Krey-Hardy map. All of CDPHE's cancer studies are online. There is a map with data and summaries.

### **JON LIPSKY PRESENTATION**

Jon Lipsky, retired Federal Bureau of Investigation (FBI) agent, who led a raid on Rocky Flats in 1989, shared a presentation about the contamination along the Indiana corridor from Rocky Flats.

- Lipsky introduced himself with a Disclosure, summarized his involvement regarding the Rocky Flats Nuclear Weapons Plant (Rocky Flats), and contended that the standards for clean-up did address the hazards to humans. Lipsky has a master's degree in criminology, law, and society. He worked as a police officer in Las Vegas after college then as an FBI agent. In 2005, he became a private citizen. Various federal laws and rules constrain him from completely disclosing all information about the Rocky Flats criminal and special federal grand jury investigations, and he has been threatened with contempt violations regarding his 1992 Congressional and 2005 Marilyn Cook testimonies.
- Lipsky collaborated in writing a book called "*The Ambushed Grand Jury*" published in 2004. It was written in contestation of the designation of the wildlife refuge, which was part of the right-of-way for the Jefferson Parkway. He is an advocate for releasing the special federal grand jury documents to the public. Lipsky testified as a subject matter expert in the 2005 Marilyn Cook trial and in 2010 before for the Colorado State House for the Informed Consent Bill with Colorado Representative Wes McKinley. He collaborates with the University of California, Irvine; Rocky Flats Nuclear Guardianship; University of Colorado Archives' - Atomic West Project; and, Rocky Flats nuclear worker advocates.
- The 1987 FBI/EPA predication for a federal criminal investigation at Rocky Flats was the Mary L. Walker briefing memo from 1986 which states, in part, "that some of the waste facilities are patently "illegal." (1986: Barton, John: p. 4 at <https://rockyflatsambushedgrandjury.com/wp-content/uploads/1987-Mary-L-Walker-Briefing-Memo.pdf>).
- A short segment of the [December 15, 1988 thermal imaging aerial videos](#) taken of Rocky Flats before the FBI raid was presented. It was sub-freezing (seven degrees Fahrenheit) with snow on the ground. The video shows thermal activity near the 207 Solar Evaporation ponds, Pond B-3 on South Walnut Creek and East Spray Field runoff to Woman Creek. The federal criminal investigation concluded in 1992 with

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the Rocky Flats contract operator pleading guilty to illegally utilizing a closed 207 Solar Evaporation Pond, violating Pondcrete storage regulations, and operating the Spray Fields (resulting in runoff of Rocky Flats contamination).

- The solar evaporation ponds were closed in 1985 by CDPHE. Rockwell utilized the solar ponds contrary to regulatory authority and contaminants leaked into the groundwater and resurfaced in North Walnut Creek, flowing into the Great Western Reservoir, which polluted drinking water supplies for Broomfield.
- The sludge in the solar evaporation ponds was mixed with Portland cement. The resulting “pondcrete” was stored on the 750 Pad and leaked into South Walnut Creek. The [spray irrigators](#) at Rocky Flats ran 24/7, 365 days a year. The rows of sprayers operated outside of the industrial area, and the spray irrigation was done on the west side of the plant as well. Rockwell knew that they were not supposed to [spray over the east trenches](#), but they did. They recharged the burial sites, which caused underflow, resurfacing, and offsite flow.
- The Jefferson Parkway was conceptualized in the 1960’s. Since that time, questionable waste burial practices, undocumented waste sites, fires, criticalities, and accidents at the site have become publicly known. There have been various studies conducted, including the Ed Martell (National Center for Atmospheric Research) study and [Krey-Hardy \(US DOE\)](#) studies that created a contour map of (weapons-grade) plutonium (239) in surface soils extending over a large area to include the planned Jefferson Parkway. Times have changed, and the present configuration of the Jefferson Parkway should no longer be considered.
- Rocky Flats and its original buffer zone was 2,200 acres and there was no east entrance off Indiana Street from 1951-1975. Following the 1969 Rocky Flats fire and Marcus Church lawsuits the Rocky Flats buffer zone was increased to 6,500 acres. The Jefferson Parkway’s right-of-way area (post-1975 Rocky Flats buffer zone) was also a superfund site, which was delisted in 2007. In 2007 the 20,000 off-site acres, including a portion of Candelas, was delisted as a part of the Rocky Flats superfund site. The contractor clean-up of the 2007 delisted sites were without an independent verification and no clean-up action was taken.
- From 1999-2003, CDPHE conducted a buffer zone contamination review with the DOE. The public reports indicate 28 Areas of Concern resulted in no further action and 25 Areas of Interest were not addressed. Over 80 million gallons per year of Rocky Flats effluent flowed from Rocky Flats to Pond B-3 (South Walnut Creek) then spray irrigated, some of which was runoff to Walnut Creek to the Great Western Reservoir and Woman Creek to Stanley Lake. Sludge was buried in the original landfill (OLF) until 1968, after 1968 to the present landfill (PLF).
- A nuclear worker from Rocky Flats stated that “standards for cleanup do not address the hazards for humans.” Only the environmental samples on or after June 28, 2001 were considered for the Comprehensive Risk Analysis (CRA). Environmental samples from the 1986 CEARP, 1987 RCRA Part B Permit (important regulatory decision that allowed Rocky Flats to operate) and the June 1989 FBI/EPA search warrants were not considered for the CRA. The CRA is the basis for the EPA

and CDPHE to designate Rocky Flats safe or. The EPA and CDPHE determination of “safe” is a failed concept.

- There are in-place subsurface features such as pits, trenches, and landfills that need independent verification (specifically trenches one and two). The DOE believes that animals do not burrow below eight feet, even though prairie dogs have been known to burrow 16 feet, worms to 32 feet. Actinides do not remain in place during large storm events, even though DOE has stated otherwise.
- The Jefferson Parkway should not be built through any part of Rocky Flats, and Rocky Flats workers deserve their own unique compensation programs.

### **Clarifying Questions**

Participants asked clarifying questions about Jon Lipsky’s presentation. Questions are indicated in italics, followed by the response:

*What was the purpose of the spray irrigation field?*

The purpose of spray irrigation fields was to disperse the effluent from Rocky Flats for soil percolation and solar evaporation without runoff to the creeks or offsite.

*What was the reason for the expansion from 2,200 to 6,500 acres?*

The Church family, previous land owners, were provided cattle grazing rights near Rocky Flats. Rocky Flats activities and operations caused harm to the cattle and public disclosure of Rocky Flats contamination in the 1970s resulted in federal lawsuits over property devaluation. The Church family was compensated over \$9 million in 1985 to resolve the federal lawsuits.

### **KRISTEN IVERSEN PRESENTATION**

Kristen Iversen, author of *Full Body Burden: Growing up in the Nuclear Shadow of Rocky Flats*, presented on the public health implications related to Rocky Flats.

- Iversen is a professor, writer, and journalist. She holds a PhD from University of Denver and has taught around the country. She now is the department head for a PhD program in nonfiction at the University of Cincinnati. She was born in 1958 and grew up near Rocky Flats. When she was ten years old, her family bought a second house in Arvada, closer to Rocky Flats. She rode horses up and down Indiana Street and swam in Stanley Lake. Nearly every household in her neighborhood had a case of cancer. (Kristin Haag, the daughter of the builder Rex Haag, was diagnosed with bone cancer at age 11 and died a month after her leg was amputated; a young boy who lived next to her was diagnosed with testicular cancer and they moved away; a school friend’s family—the Smith family—lived off the land and every child had health issues, including brain cancer). Iversen’s family had several cancer diagnoses, autoimmune diseases, and other diseases that originated from the toxic poisons that entered the air, water, and soil from Rocky Flats.
- By 1968, there had already been over 200 fires at Rocky Flats and there was never a public warning or evacuation or even any information provided to the public. When her parents bought their house in the Brideldale neighborhood, they had to sign an

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advisory notice acknowledging the fact that there was plutonium in the soil and that there was an associated health risk. No offsite clean-up was conducted.

- As a writer, Iversen met with managers at Rocky Flats and prepared reports that were sent to Albuquerque, Washington D.C., and other DOE offices. Her book *Full Body Burden* was heavily fact-checked by people both within and outside of the nuclear industry. She interviewed workers, DOE officials, Rocky Flats officials, residents, etc. Since the release of her book, she has received many emails and letters. Below are quotes from several of the letters:
  - “I grew up in Arvada, went to Fitzmorris Elementary, and graduated from Arvada West. We played in Ralston Creek. There were approximately 80 kids in my grade; we are all in our early fifties now. Of the 20 or so I have kept track of since high school, my own son was diagnosed with testicular cancer at age 19 (in 2009), and a friend's son is a leukemia survivor. Another friend's sister died of brain cancer in her 20s; another's sister is battling her third recurrence of ovarian cancer; and one friend's father, a Rocky Flats worker, died of brain cancer. Aside from the father, all were diagnosed before age 40. We are all longtime Arvada residents.”
  - “My family grew up across 80th from Meadowgate and our closest friends still live in Meadowgate. I just turned 34, and my parents moved into their current house near Sierra Elementary when I was 6 months old. I am the youngest of three; my brother will be 40 this year and my sister will be 38. My brother was diagnosed a few years ago with M.S. My father was diagnosed with Parkinson's a year later. In 2012, I found a tumor in my thyroid that they thought was cancerous, so I had a full thyroidectomy. My sister had surgery for breast cancer and she has another surgery next week. Then, in January of this year, my mom was diagnosed with leukemia. As you can imagine, we are asking ourselves what is going on.”
  - “I am a local veterinarian. My daughter, age 52, is currently processing through stage four brain cancer and is in hospice. She has lived her entire life in Golden and Arvada; she lived with their two children on a ranch in an open field of 100 acres near Rocky Flats where it was constantly windy. Her husband died in July 2012 of brain cancer after a two-year battle. My husband was born and raised in Denver and had several veterinary clinics in California and Colorado. He took over a veterinary clinic in Arvada near Rocky Flats when the owner was diagnosed with lymphocytic leukemia and died. He [the husband] was amazed to see the alarming number of cancer cases in animals. It was so much higher than average that he asked other local veterinarians about it and they seemed to think that the incidence was yes, unusually high, but normal *for that particular area.*”
  - “My uncle lived near Rocky Flats and my father lives in Westminster. My father had testicular cancer a couple of years ago and was recently diagnosed with Primary CNS diffuse large b-cell lymphoma. He had a brain tumor removed a couple of weeks ago, and now he is undergoing extensive chemotherapy treatments for the next couple of months. We do not

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understand it; he always took care of his body. There is much unexplained illness in our family.”

- We live in Candelas. My young daughter was diagnosed with AML leukemia when she was 11 months old. She is now 17 months old and we are still in the hospital fighting for her life. She relapsed in December. Now we are trying to get her back into remission so that she can have a bone marrow transplant.”
- “I left Colorado in late 1995 and returned in 2001. I was stunned by the huge amount of development around Stanley Lake. After hearing my reaction to the development, my realtor whispered that her grandmother had moved to a property near the lake a few years earlier with her three dogs and that within three years, the dogs were dead.”
- “We live near Rocky Flats and we got a wonderful yellow lab. As a puppy, dug in the yard where she buried her bones. She developed cancer in one of her hind legs, which was amputated. The expectation from the vet was that she would have at least another year-and-a-half with us. Sadly, the cancer spread quickly and we had to have her euthanized.”
- “There used to be a turkey farm called Jackson Turkey Farm. The family that owned the farm talked about DOE raids on the farm. They would show up and test the turkeys and tell the families not to tell anyone. I wonder what happened to the data about those turkeys.”
- “We just bought our house from the original homeowners. At no point during the home-buying process did anyone tell us about Rocky Flats. We want to move now. We do not want to raise our children here.”
- There are a lot of new grassroots organizations and a growing effort to face what has happened at Rocky Flats. It has been frustrating to receive all these messages and not be able to point the people to any resources or offer any help; these people have been systematically silenced.
- The Rockwell lawsuit represented over 13,000 people who believe that their health was impacted by Rocky Flats. The pattern of illness indicates that the population at Candelas should be tracked closely. There is no public health monitoring or medical assistance/hotline offered for these people. These stories are too persistent and consistent to be perceived as just anecdotal or emotional. The initial results of the downwind health study showed health impacts tied to the plume patterns from the 1950’s and 1960’s. Plutonium has a half-life of 24,000 years. This issue will not go away or decrease over time.

### **Clarifying Questions**

Participants asked clarifying questions about Kristen Iversen’s presentation. Questions are indicated in italics, followed by the response.

*Is Iversen working on other projects related to this work?*

There has been an international response to *Full Body Burden*. Iversen is working on a new book titled *Doom with a View: The History and Legacy of Rocky Flats*. It presents 14

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articles/essays by professionals, writers, and scientists (some are within the nuclear industry, and some are not). The book presents a spectrum of perspectives related to Rocky Flats. It will be released within the next year. *Full Body Burden* is being made into a documentary which will be released on May 1, 2019. There is also an art exhibit by Jeff Gipe on Rocky Flats. He captures some of the only honest signage from Rocky Flats.

*What are Iversen's thoughts on CDPHE's cancer studies, presented by Van Dyke?*

There are good things about the studies, and there are serious flaws in the studies. Some of the information contradicts other valid studies. Doctor Carl Johnson was the first health director of Jefferson County to oppose development near Rocky Flats. He was fired from his job for trying to prohibit home development within ten miles of Rocky Flats and had contamination and health data to support his case. He later won a whistleblower lawsuit against Jefferson County on this matter.

## **NEXT STEPS**

- Peak Facilitation will work with the speakers to ensure that the summary accurately captures their presentations.
- At the next meeting, Bill Ray will present the results from the cost and traffic feasibility study presentation to the Jefferson Parkway Public Highway Authority (JPPHA) Board meeting. He will also present an update from the May and June Board meetings. Then the JPAC will take stock of what they have learned thus far and discuss potential recommendations they would like to consider making to the JPPHA Board.
- CDPHE will provide additional information about Indiana Street (how often it has been updated, what the fill is, plutonium levels, etc.). CDPHE will also provide a report of the soil sampling that occurred along the 300-foot buffer and whether the sampling occurred to the same depth that the road excavation would incur.

## **PUBLIC COMMENTS**

### ***Sasha Stiles***

- As a physician who cares about the health of the community, I am extremely worried about wind and soil displacement with any highway construction anywhere around the proposed bypass. Please do not just review the CDPHE data; epidemiologically, it is very suspect. Their methodologies for collecting samples and sampling techniques are not epidemiologically sound. Randy Stafford (JPAC member) has reviewed 12 soil studies and six medical studies. Why does CDPHE not acknowledge these studies? Their presentation gave sweeping proclamation without dates or location or sampling of anything. There should be review of these studies and not just reliance on CDPHE.
- The Jefferson Parkway should avoid Rocky Flats altogether. The road could go due west parallel to 128, intersecting with 93, then south on the west side of 93.
- I am not a "radical, rigid extremist." I have an MPH from Berkley and an MD from UCSF Tufts Medical Center and the University of Hawaii Medical Center. Although I am not boarded in epidemiology specifically, I know when elements are not

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carefully defined. The CDPHE studies do not follow any of the strict epidemiological guidelines in their sampling techniques that my universities would require. If you get the sample wrong, the data is suspect. I have met with many cancer patients in the downwind populations; please err on the side of caution and place the Jefferson Parkway out of harm's way.

***Anonymous Comments***

- Of all the data provided by CDPHE tonight, only two data points are pertinent: 1) Actual contamination along Indiana Street right-of-way: there are reliable scientific studies that directly refute the contamination data of CDPHE and cannot be ignored. 2) Risk of inhalation of airborne contaminated particles goes up in proportion to the actual contamination—this is not some statistical average!
- The majority of participants in the CDPHE cancer incidence study did not live in the downwind exposure area; CDPHE also did not account for latency periods of plutonium-related cancers.
- Since extensive public health studies of downwind residents have never been done, there is no way to verify the safety of the standard CDPHE used to declare the wildlife refuge and right-of-way along Indiana. The risk of exposure due to the Jefferson County Parkway construction for current and future residents will be based on the recommendation now.
- To all JPAC members: Have you read Randy Stafford's position paper and/or the science it references? If not, are you qualified to make a decision on the question of contamination?

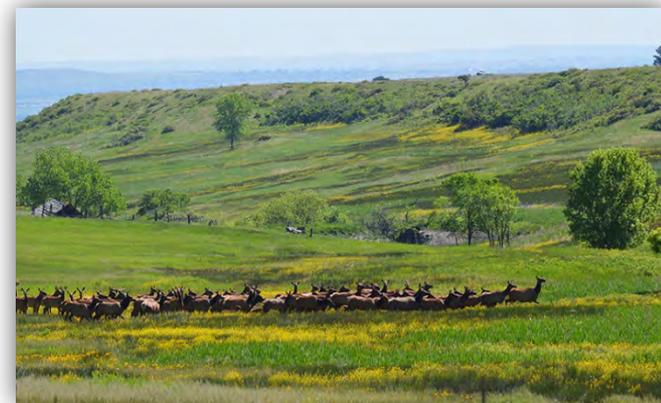
# An introduction to Rocky Flats

May 17, 2018

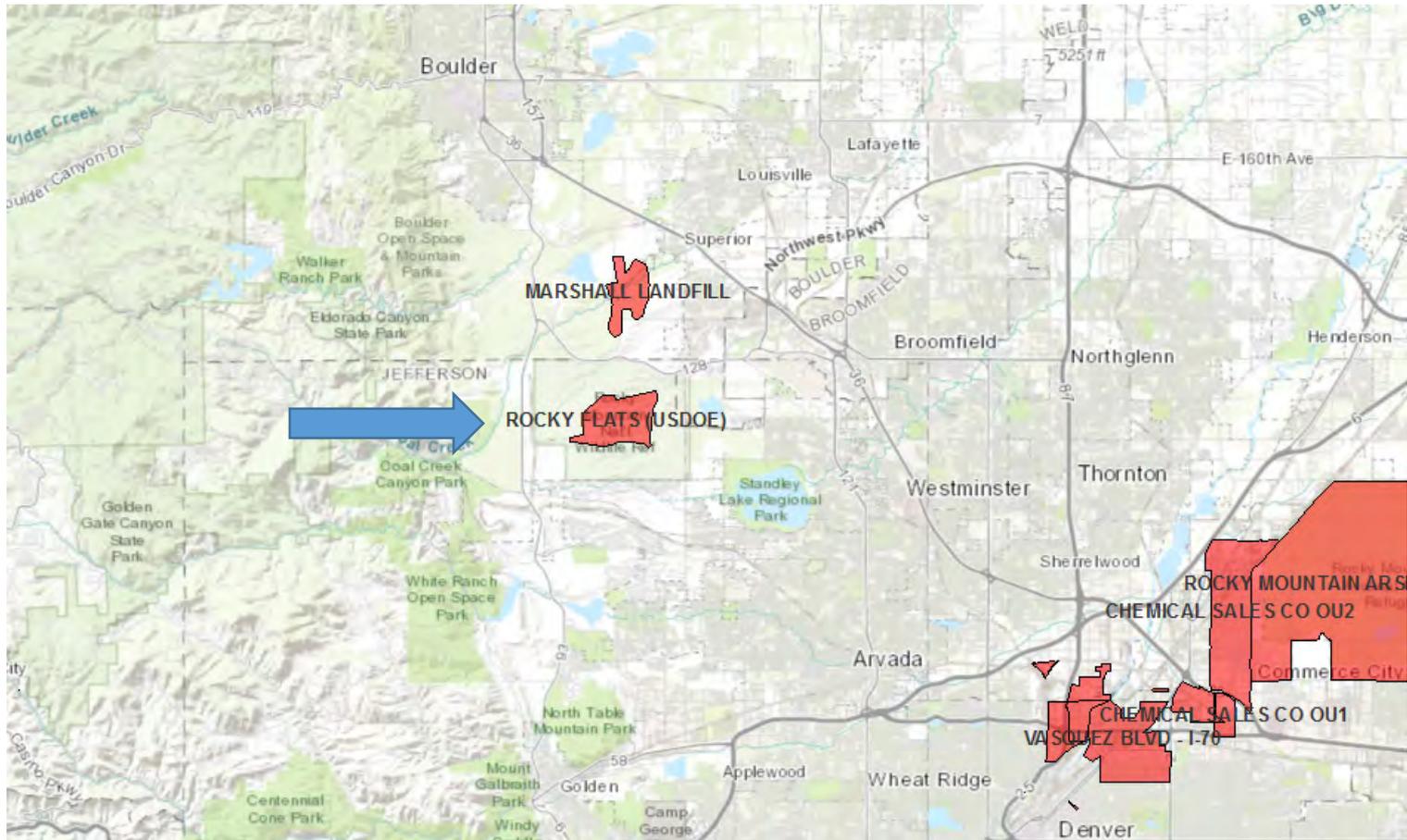
Jefferson Parkway  
Citizen Advisory Group

Colorado Department of Public Health and  
Environment (CDPHE)

[www.colorado.gov/cdphe/hm](http://www.colorado.gov/cdphe/hm)



# Rocky Flats

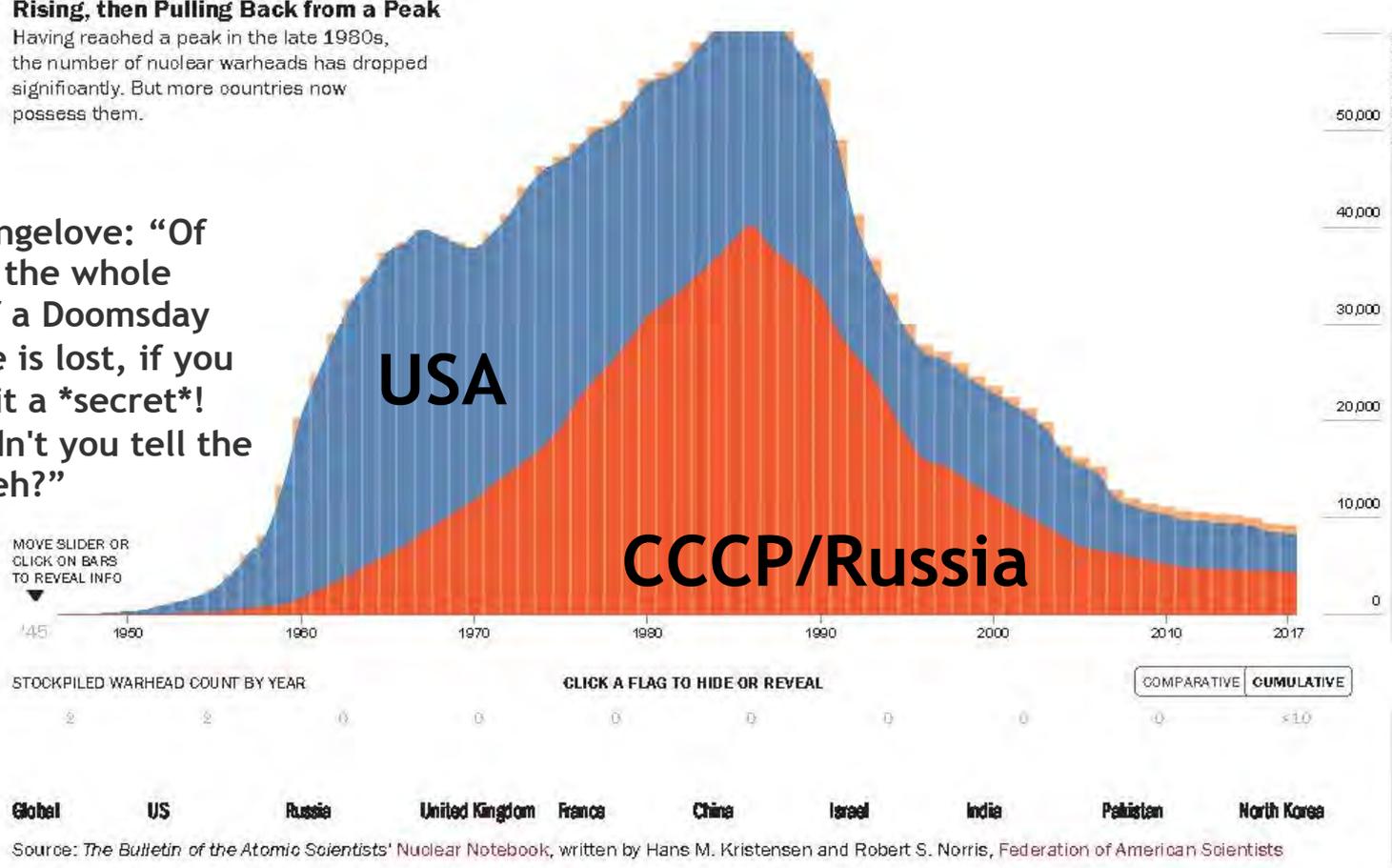


# Global warhead count vs. USA vs. Russia

## Rising, then Pulling Back from a Peak

Having reached a peak in the late 1980s, the number of nuclear warheads has dropped significantly. But more countries now possess them.

Dr. Strangelove: “Of course, the whole point of a Doomsday Machine is lost, if you \*keep\* it a \*secret\*! Why didn't you tell the world, eh?”

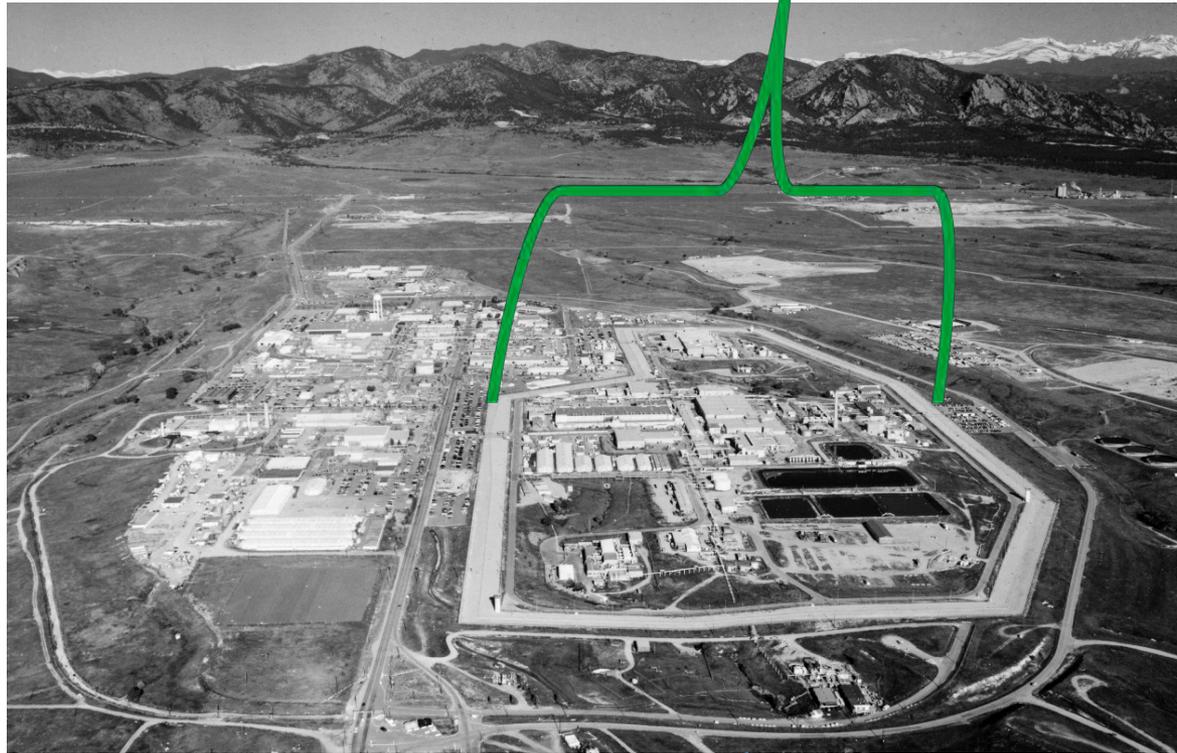


# Plutonium puck



Plutonium pit production  
for nuclear weapons

“Protected area”  
high security zone



# 903 Pad



# Timeline - Rocky Flats Plant

- 1946/1954: Atomic Energy Act
- 1951: Plant construction
- 1952-1989: Plant produces plutonium triggers during the Cold War; environmental releases on and offsite; two major fires
- 1976: Resource Conservation and Recovery Act (RCRA) - “cradle to grave” regulation of hazardous waste
- 1980: Comprehensive Environmental Response and Liability Act (CERCLA) - “Superfund”
- 1982: EPA issues first guidelines for implementing CERCLA
- 1983: EPA’s first National Priorities List (NPL)
- 1986: CERCLA “SARA” Amendments, added Section 120
  - Requires federal facilities to comply in same manner as other entities, and
  - Federal facilities on the NPL must have interagency agreement with EPA (and the state, if state so desires)
- 1986: interagency compliance agreement
- 1988: Plant operations slow
- 1989: EPA/FBI raid; Rocky Flats added to EPA’s National Priorities List

# Timeline – CERCLA cleanup

- 1991: new interagency agreement reflecting the change to a CERCLA cleanup
- 1992: operator gets \$18.5M fine for environmental crimes
- Early 1990s: state and federal environmental battles, unanswered questions get answered - e.g. **Federal Facilities Act**, amended RCRA to waive immunity from state penalties for federal violations of state hazardous waste laws
- 1990s-2005: physical investigation, sampling, and cleanup of Rocky Flats
- 1996: Rocky Flats Cleanup Agreement (RFCA)
- 2001: Congress passes the **Rocky Flats National Wildlife Refuge Act**
- 2006: site remedy selected, see CAD/ROD
  - **Central Operable Unit (COU)**
  - **Peripheral Operable Unit (POU)** - Refuge and ROW lands

# CERCLA cleanup effort during 1990s – 2000s

- 10-year, \$7 billion CERCLA (Superfund) cleanup
- Deactivated, decommissioned and demolished 800+ structures
- 421 potentially contaminated areas investigated
- ~360 areas remediated
- Largest CERCLA cleanup, at the time
- Refuge and offsite areas investigated and sampled
- COCs: arsenic, benzo(a) pyrene, dioxin, plutonium, vanadium
- Activities overseen by DOE, EPA, CDPHE, and DNFSB



Trench 1 removal



903 pad excavation



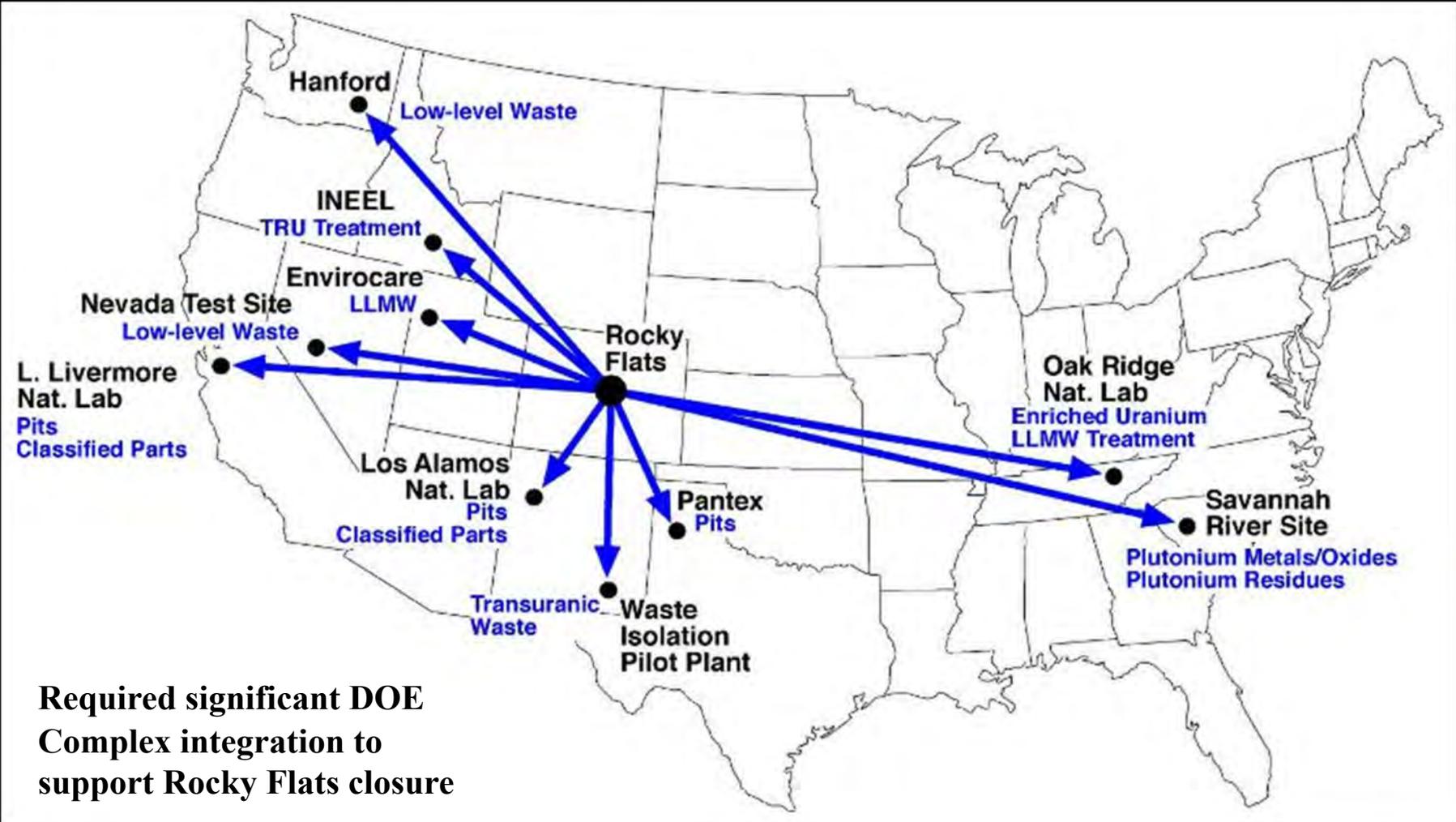
Original  
Landfill



B-881 implosion



# Special Nuclear Material and Waste Shipping



Required significant DOE  
Complex integration to  
support Rocky Flats closure

2003

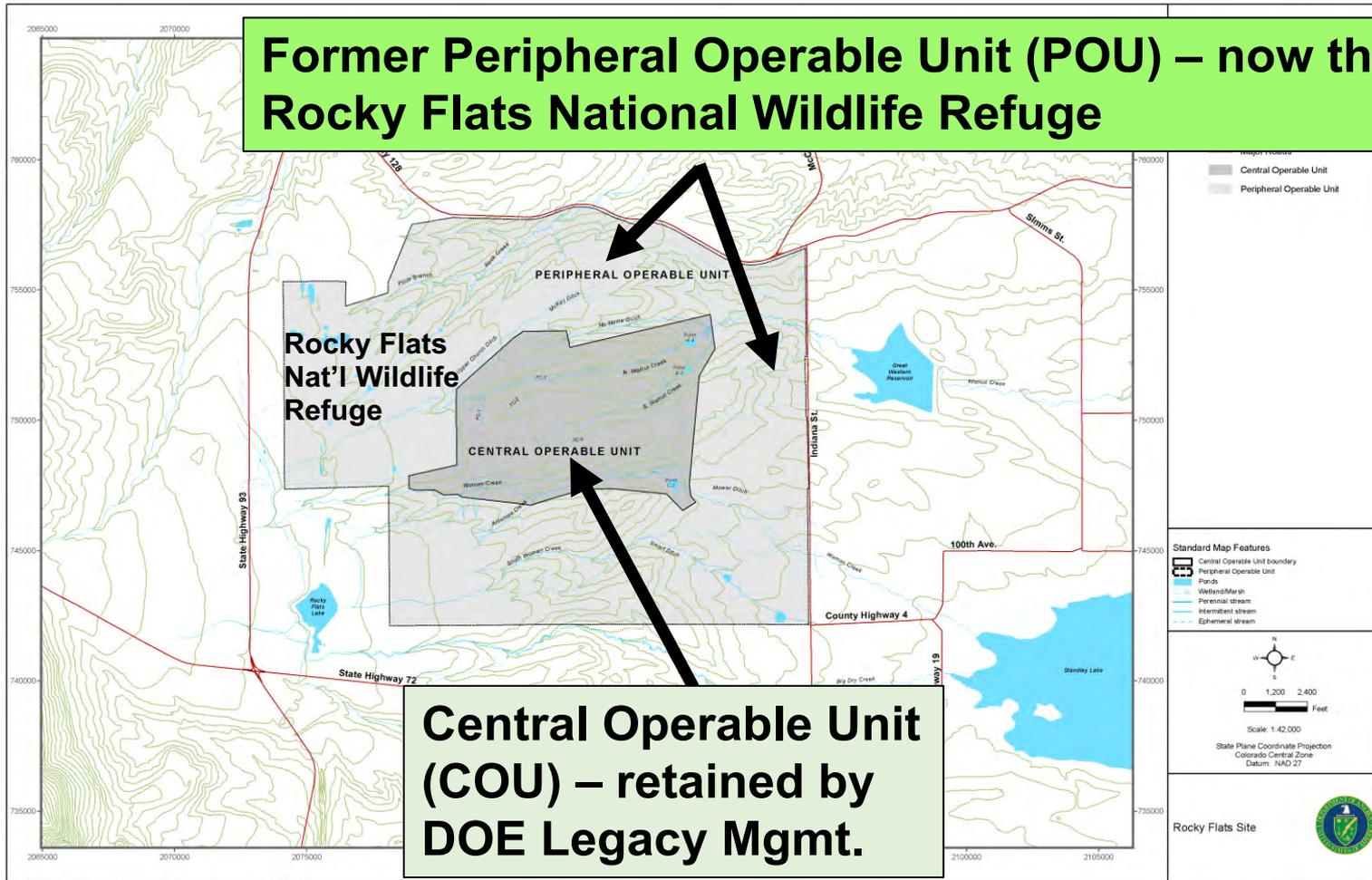


2010



**COLORADO**  
Hazardous Materials  
& Waste Management Division  
Department of Public Health & Environment

# Rocky Flats TODAY

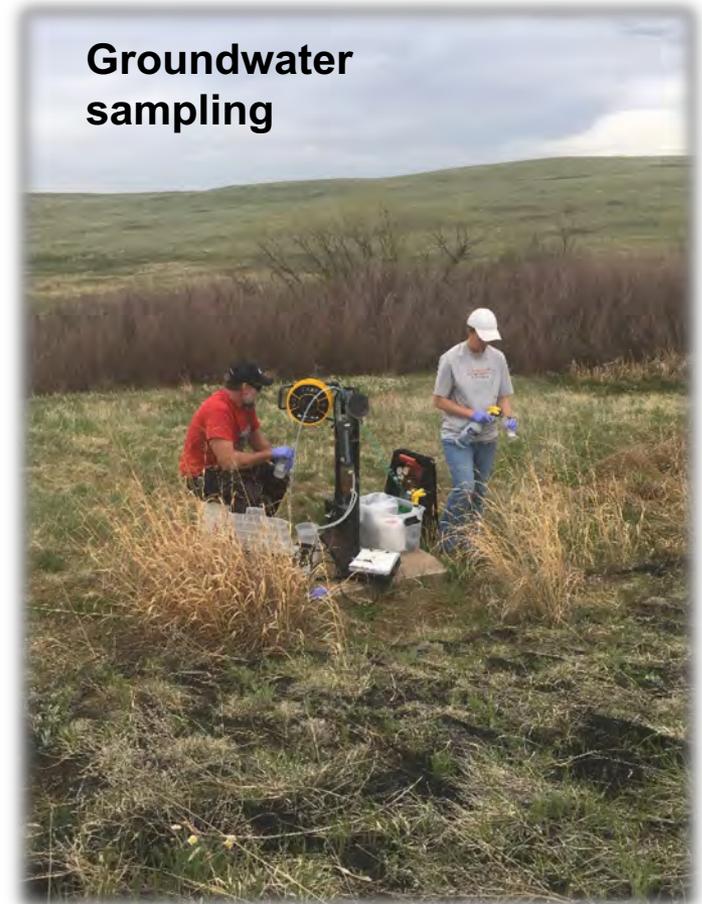




**COLORADO**  
Hazardous Materials  
& Waste Management Division  
Department of Public Health & Environment

# Timeline - post-closure

- 2006: post-closure agreement, the Rocky Flats Legacy Management Agreement (RFLMA)
- 2007: EPA delists POU from National Priorities List
- 2012, 2017: CERCLA Five-year Reviews conclude the remedy is functioning and protective of human health and the environment
- Ongoing remedy monitoring and maintenance, reviews, site visits, and (3) groundwater treatment systems operating



# Groundwater treatment systems



# A regulatory analogy...



- Speed limits.
- Numerical standards not unique concept to Rocky Flats - quantitative regulation of water, air, etc.
- CDPHE regulates based on applicable law, regulations, and guidance.
- Agencies are not the legislature.

# What “cleaned-up” means

- Remediation met applicable legal and regulatory requirements.
  - Central Operable Unit was remediated to CERCLA risk range, per regulations.
  - Refuge/ROW was not remediated because detected levels were so low the land did not meet the threshold for action.
  - Environmental regulatory standards area **health-based**, not background based.

# Health-based environmental standards and risk calculations

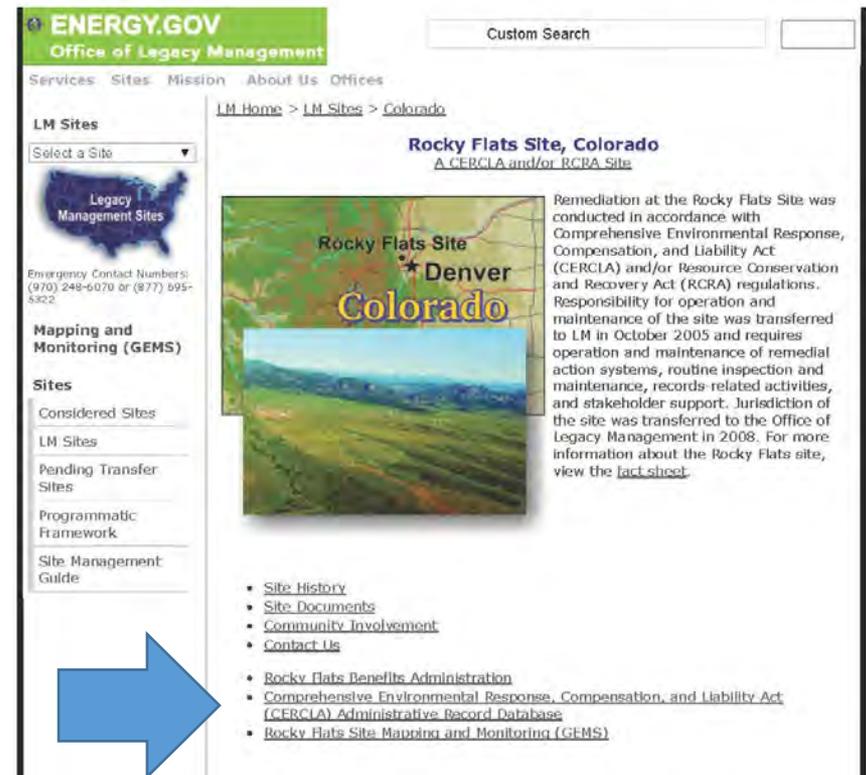
- EPA's Integrated Risk Information System (IRIS)
  - Looks at toxicology and chemistry regarding various chemicals' human health effects
  - Provides assessments of hazards that are then used in decision-making and site risk assessments nationwide
- Risk assessments - can consider different exposure scenarios, doses, adult and child biology, animal biology, chemical hazards, behaviors, and identifies pathways

# Rocky Flats cleanup data and records available online

- Agency records:

- **DOE** - Administrative Record  
<https://www.lm.doe.gov/CERCLA/SiteSelector.aspx>
- **CDPHE** - online Records Center  
<https://www.colorado.gov/cdphe/hmwmd-records-review>
- **EPA** - Environmental Information Service Center

- Older records in hard copy



The screenshot shows the Energy.gov Office of Legacy Management website. The page is titled "Rocky Flats Site, Colorado" and is identified as a CERCLA and/or RCRA Site. It features a map of the site, a list of links, and a description of the site's history and remediation. A blue arrow points from the "Older records in hard copy" bullet point to the "Site History" link in the list.

**ENERGY.GOV**  
Office of Legacy Management

Services Sites Mission About Us Offices

LM Home > LM Sites > Colorado

**Rocky Flats Site, Colorado**  
A CERCLA and/or RCRA Site

Remediation at the Rocky Flats Site was conducted in accordance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and/or Resource Conservation and Recovery Act (RCRA) regulations. Responsibility for operation and maintenance of the site was transferred to LM in October 2005 and requires operation and maintenance of remedial action systems, routine inspection and maintenance, records-related activities, and stakeholder support. Jurisdiction of the site was transferred to the Office of Legacy Management in 2008. For more information about the Rocky Flats site, view the [fact sheet](#).

- [Site History](#)
- [Site Documents](#)
- [Community Involvement](#)
- [Contact Us](#)
- [Rocky Flats Benefits Administration](#)
- [Comprehensive Environmental Response, Compensation, and Liability Act \(CERCLA\) Administrative Record Database](#)
- [Rocky Flats Site Mapping and Monitoring \(GEMS\)](#)

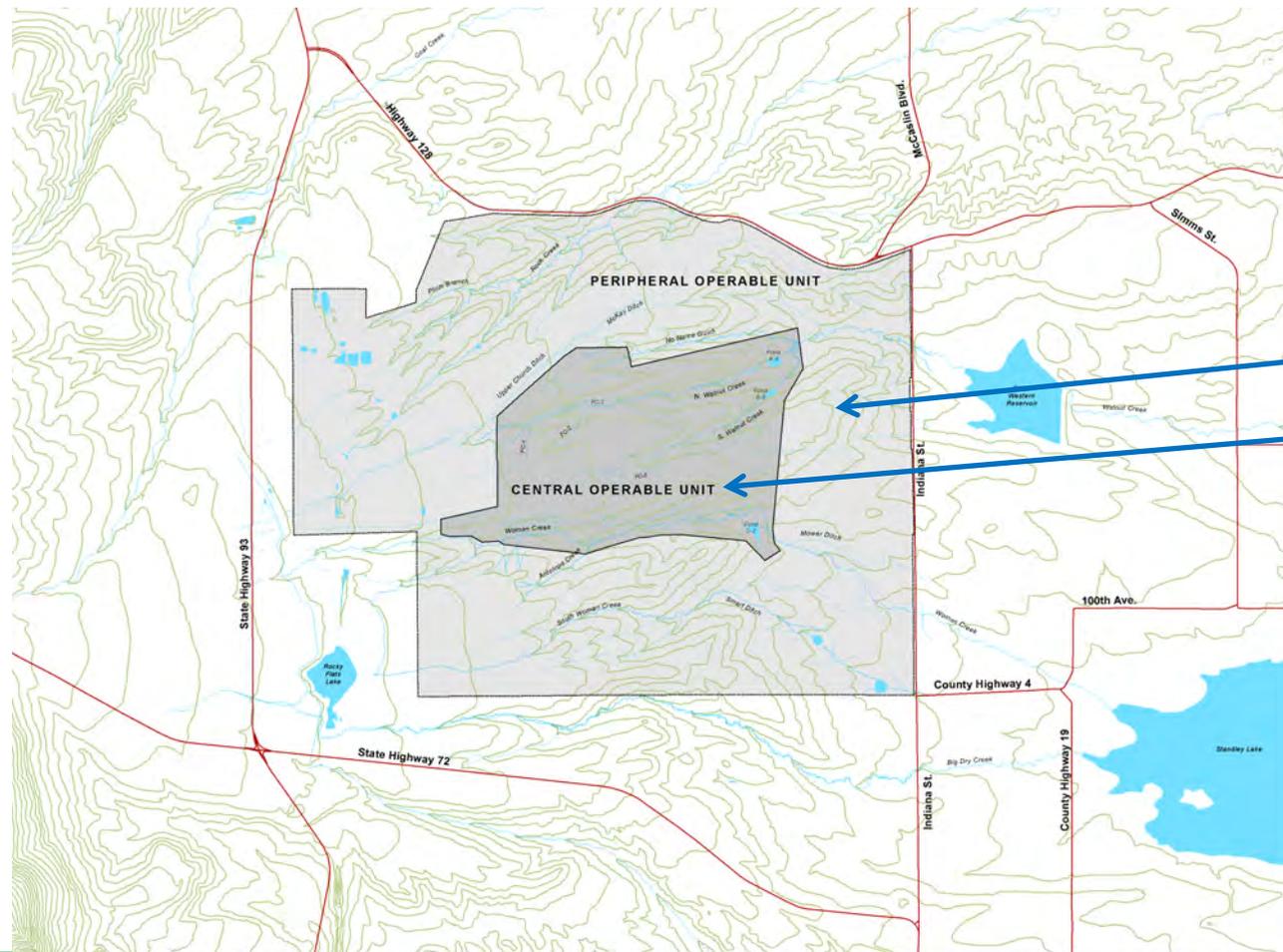
# There is on and off-site residual contamination

- Residual contamination within regulatory limits.
- Agencies continue to monitor the site and remedy.
- There have never been conditions to justify a CDPHE penalty under RFLMA.



U.S. DOE (2006) RI/FS Report – Americium 241

# Radioactivity levels are well below regulatory standards



Average Residual  
Plutonium  
Contamination  
in Surface Soil:

Refuge = 1.1 pCi/g

COU = 2.3 pCi/g



**DOSE:**  
< 1 mrem/year for  
adult or child

**RISK:**  
< 1 in a million risk  
of excess cancer



# State radioactivity standard

- State dose limit =

25 mrem/year above background

- Calculated doses for plutonium exposure in the most-contaminated area:

- 0.3 mrem/year for an adult refuge worker
- 0.2 mrem/year for a child visitor
- 0.07 mrem/year for an adult visitor





# Radiation Dose Chart

Airport security scan  
 0.005 mrem

Home smoke detector  
 0.008 mrem/year

Eating one banana  
 0.01 mrem

Rocky Flats radiological  
 dose estimate (RI/FS)  
 <1 mrem/year

Airplane flight from  
 Denver to Juneau, AK  
 1 mrem

Off-site dose estimates  
 for 903 Pad plutonium  
 release at Rocky Flats,  
 1965 -1969  
 0.91 to 7.2 mrem

Typical medical X-ray  
 10 mrem/X-ray

Average Three Mile  
 Island dose to the  
 public on the day of the  
 accident  
 <2 to 10.4 mrem/day

Average targeted  
 nuclear medicine dose  
 400 mrem/year

Dose limit for a  
 pregnant worker  
 500 mrem/pregnancy

Average annual dose for  
 an American  
 360 to 600 mrem/year

Full body CT scan  
 1,000 mrem

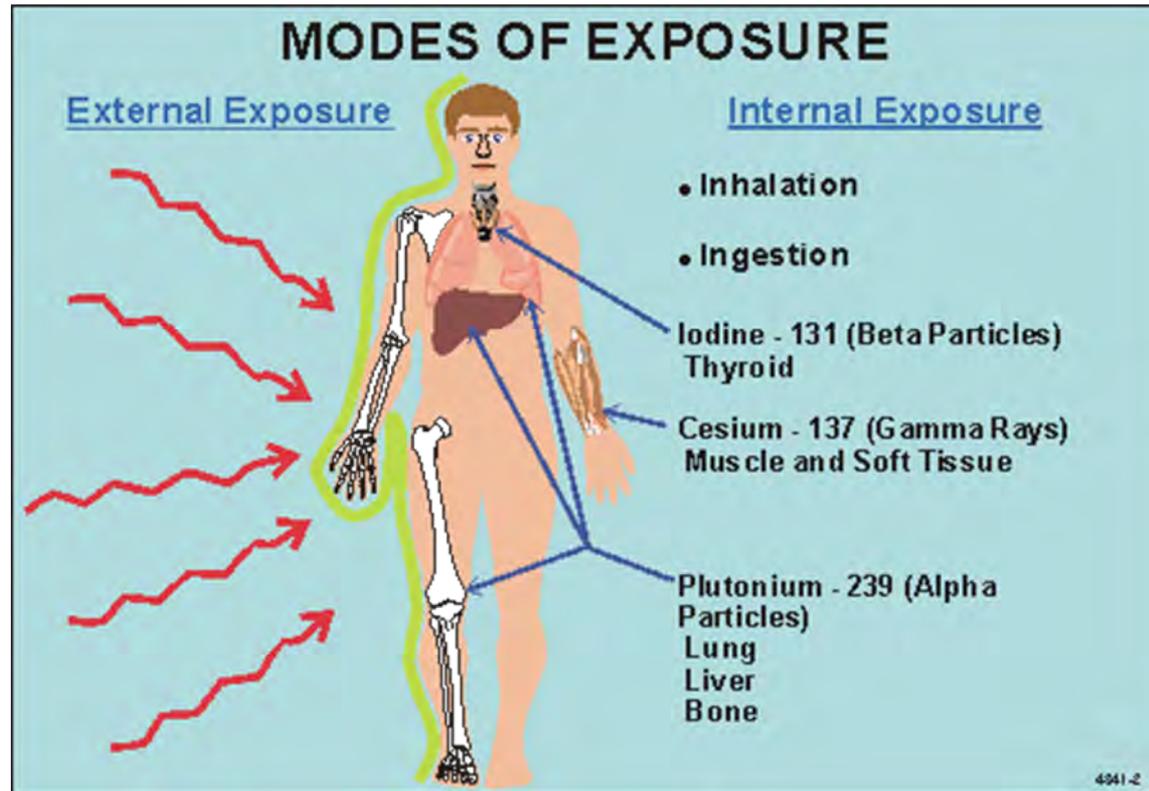
Annual nuclear worker  
 dose limit  
 5,000 mrem/year

Dose at which there is a  
 link to cancer  
 10,000 mrem

Chernobyl accident, high dose  
 >80,000 mrem

# Exposure Pathways

1. Inhalation
2. Ingestion
3. Dermal absorption
4. Injection
5. External irradiation



# Exposure Pathways

## Wildlife Refuge Worker:

- staff a visitor center,
- monitor and maintain the trail system,
- dig fence posts,
- track the on-site wildlife populations.
- 230 days/year; 18.7 years



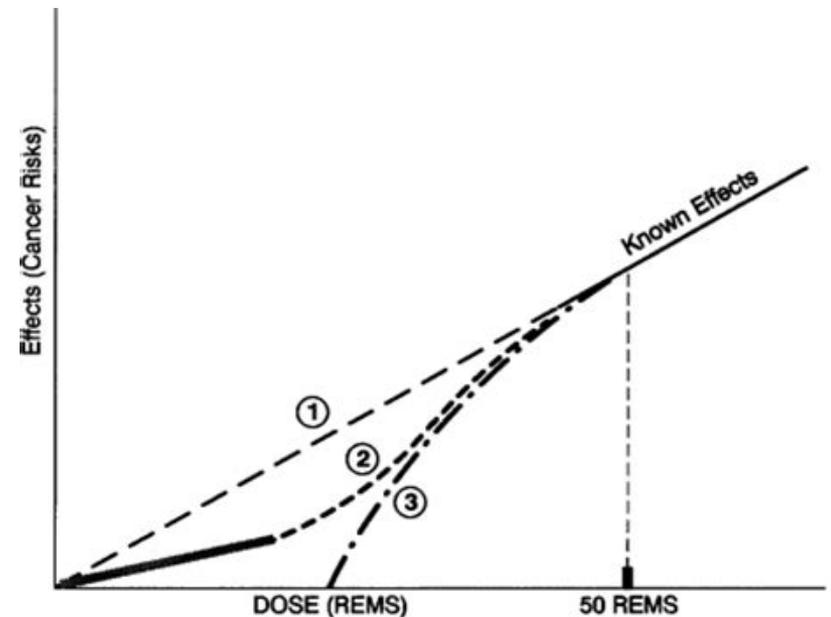
## Wildlife Refuge Visitor:

- Hike, Bike, birdwatch
- 100 visits/year
- 2½ hours /visit
- 24 years (adult) + 6 years (child)
- Soil ingestion rate = 60 mg/day



# What's the impact of a small amount of ionizing radiation?

- Cancer possible, not probable - small risk
- Regulations provide limits below which, risk/dose is negligible
- Linear no-threshold dose model



**Note: in rems, not mrems**

# Can inhaling even one particle of plutonium cause cancer?

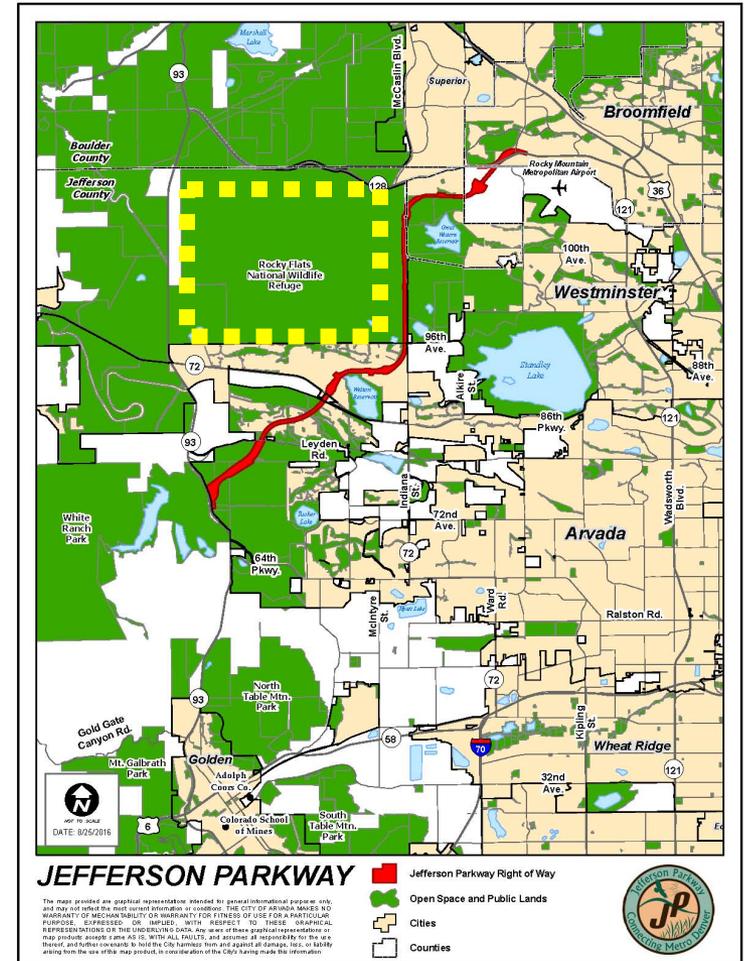
- The risk is not zero, but it is very small
- Plutonium is a global contaminant; it is everywhere
- Principle of toxicology: “The poison is in the dose.”
  - “Millions of dust particles contaminated with  $\text{PuO}_2$  must be inhaled in order for significant radiation doses...”

# Rocky Flats is very well-studied

- CERCLA environmental investigation
- General process used at other CERCLA sites
- Informed decisions based on data collected, employee interviews, records, and process knowledge
- Thousands of samples collected on and offsite:
  - Air
  - Soil
  - Groundwater (1,289 monitoring wells)
  - Surface water
  - Sediment

# Would Parkway construction release harmful levels of plutonium?

- 300-foot ROW along Indiana granted in the Refuge Act
- Environmental investigation concluded both the Refuge area and off-site areas are suitable for unlimited use and unrestricted exposure



# Right-of-way sampling

- Lots of soil samples
- Maximum ROW plutonium concentration = **8.8 pCi/g**
- Average ROW plutonium concentration = **1.4 pCi/g**
- Third-party sampling east of ROW agree with DOE sampling results

300 feet west of Indiana St.

# Federal and state standards for airborne radionuclides

## FEDERAL STANDARDS

National Emissions Standards for Hazardous Air Pollutants (NESHAPS, part of the Clean Air Act)

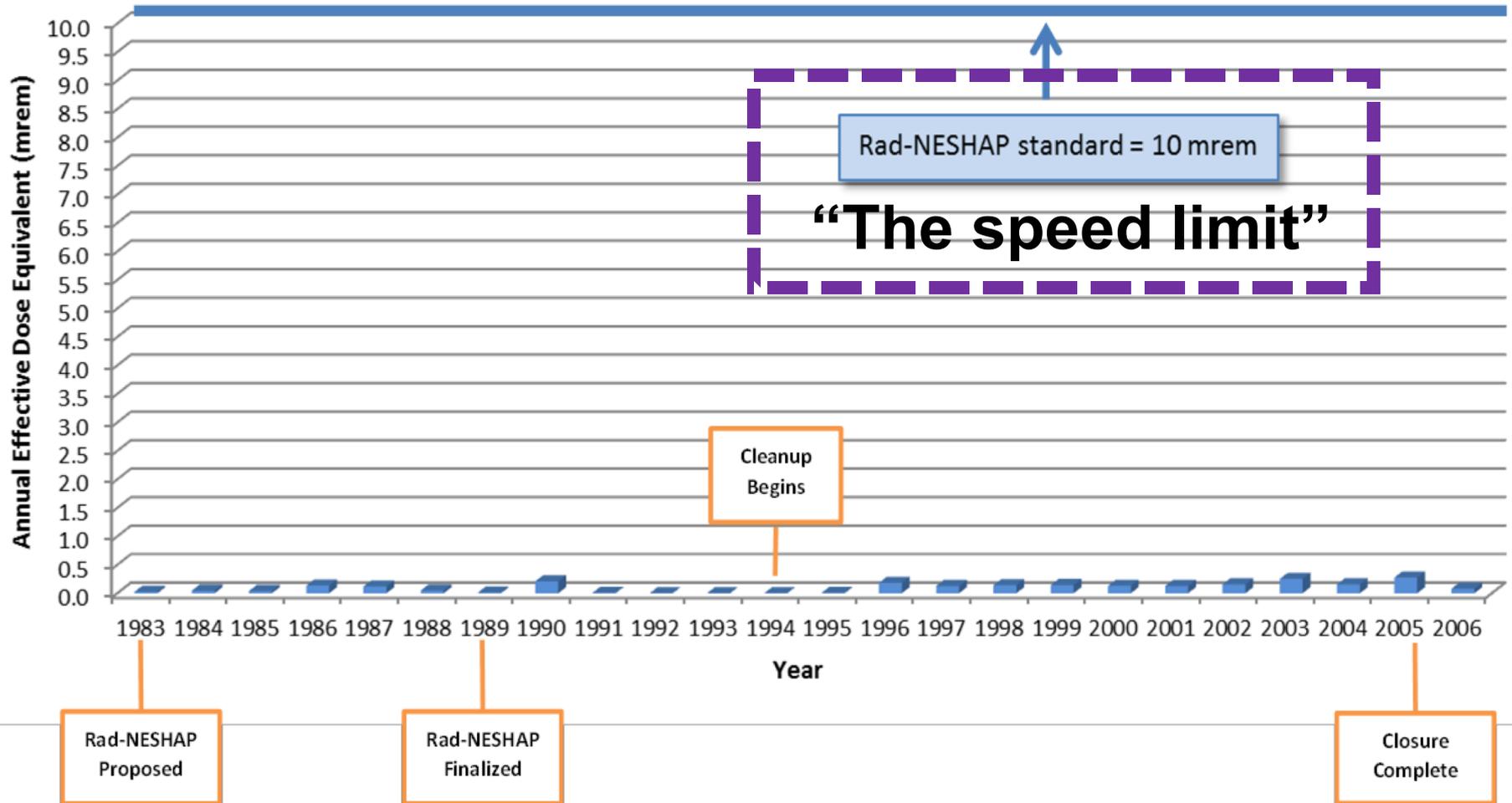
**10 millirem/year** dose limit for radionuclide air emissions

## STATE STANDARDS

Colorado radiation standard limits public to a total annual dose above background of **25 millirem/year**

Pu-239/240 air emissions limit: **0.02 picocurie per cubic meter of air** (average annual emission)

# Maximum Off-Site Dose Through the Air Pathway



# Rocky Flats Cancer Studies

# What is cancer?

- Not a single disease
- Group of 100 different diseases
- Cancer is common
- Second leading cause of death in Colorado
- 1 out of 3 people will be diagnosed in their lifetime



# Major risk factors



- Older age
- Family history/genetics
- Tobacco use
- Sun exposure
- Hormones
- Alcohol use
- Infections
- Diet
- Obesity
- Lack of physical activity



# What about environmental exposures?



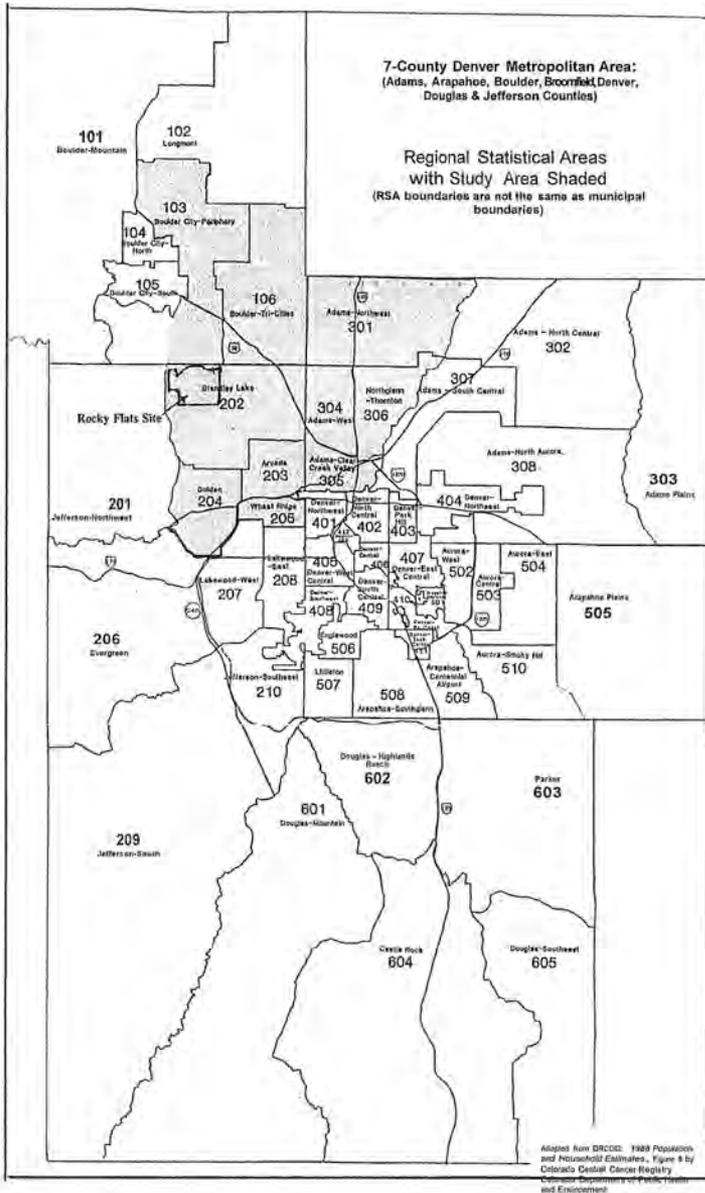
- Relatively few cancers definitively linked to environmental or occupational exposures
- Risk depends on amount and duration of exposure
- Cannot easily separate chemical exposure risk from other risk factors



# Goal of a cancer registry study

Determine whether there is a greater than expected number of people diagnosed with specific types of cancer during a limited time period in a specific geographical area.





# Rocky Flats Cancer Registry Studies

- Study time periods
  - 1980-1989
  - 1990-2014
- Compared incidence of cancer in the areas surrounding Rocky Flats to the remainder of the metro area
- Ten cancer types
  - Esophagus
  - Stomach
  - Colon and rectum
  - Liver
  - Lung
  - Prostate
  - Bone
  - Leukemias
  - Lymphomas
  - Brain and nervous system
  - “Rare” cancers

# Cancer Registry Findings

- 1998 Report
  - 186 out of 190 cancer ratios tested indicated no significant difference from the remainder of the metro area
  - Four significant findings
    - Lung cancer elevated (Adams-West and Northglenn/Thornton)
    - Colorectal cancer elevated among males (Wheatridge)
    - Brain/CNS cancer elevated among females (Arvada)
- 2016 Report
  - No differences for stomach, liver, bone, leukemia, lymphomas, and brain/central nervous system cancers
  - Eight significant findings
    - Lung cancer elevated (Arvada, Adams-West, Adams-Clear Creek Valley)
    - Colorectal cancer elevated among males (Adams-West, Adams-Clear Creek Valley)
    - Esophagus cancer elevated among females (Golden)
    - Prostate cancer elevated (Boulder City - Periphery)
- 2017 Supplement (“rare” cancers)
  - No significant differences except for males in Wheatridge
    - Finding driven by a higher than expected number of pancreatic cancers

# Cancer Study Conclusions

- No clear trend in elevated cancer incidence that would suggest an environmental exposure
- Most of the elevated cancer findings (lung, colorectal, esophagus) have tobacco use as a major risk factor
  - The vast majority of these cases had a history of tobacco use
  - The locations of these elevated cancer incidence had higher rates of tobacco use compared to the rest of the metro area
- These studies do not suggest potential plutonium exposure or living in the vicinity of Rocky Flats has significantly increased the risk of cancer for residents.

# Questions?

- Environment and cleanup - Carl Spreng and Lindsay Masters, [carl.spreng@state.co.us](mailto:carl.spreng@state.co.us) and [lindsay.masters@state.co.us](mailto:lindsay.masters@state.co.us)
- CDPHE cancer incidence studies - Mike Van Dyke, [mike.vandyke@state.co.us](mailto:mike.vandyke@state.co.us)

# Rocky Flats Contamination

## Jefferson Parkway Advisory Committee

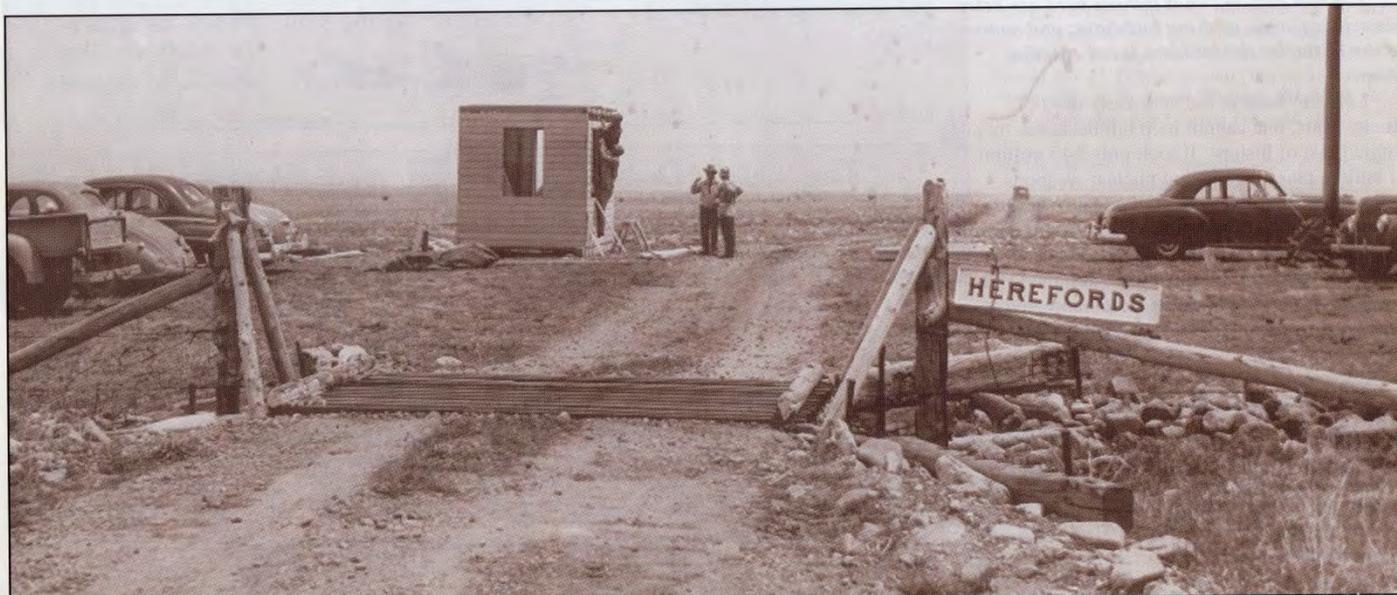
*Rocky Flats*  
**envision**

March 26, 2001  
volume 7  
number 6

**Make it safe. Clean it up. Close it down.**

*From cattle guards to armed guards*

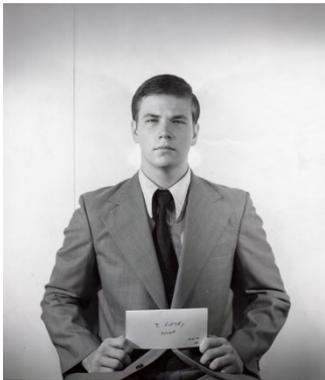
# Rocky history anything but Flat



*In the spring of 1951, crews arrive at the first west access road to survey and to put up a temporary guard shack on the cattle ranch that would become Rocky Flats. Photo by Harry Rhoads, courtesy of the Rocky Mountain News photo library*

# Jon Lipsky, MAS

## FBI, Retired



**1972-1978**  
**College Years**



**1978-1984**  
**LVMPD**



**1984-2004**  
**FBI**



**2005-Present**  
**Truth-seeking**

**Summary Presentation for**  
**Jefferson Parkway Advisory Comm.**

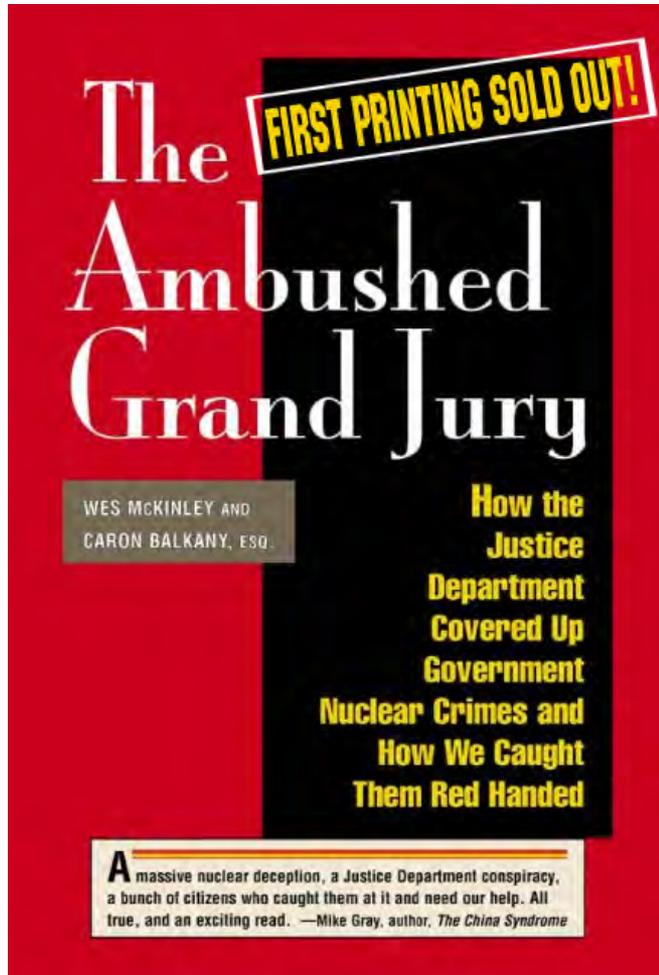
**May 17, 2018**

# Disclosure

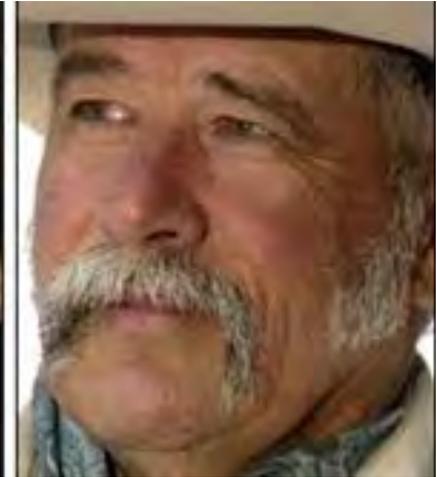
- Various federal laws and rules constrain me from completely talking about the Rocky Flats criminal and Special Federal Grand Jury investigations;
- I have been expressly threatened with Contempt violations involving my 1992 Congressional and 2005 Cook trial testimony by Government actors;
- The Government **will not** stop me from repeating Rocky Flats' information from public documents in the interest of public safety.

# “The Ambushed Grand Jury”

Published March 2004



Caron Balkany



Wes McKinley

By Congressional Authority

SFGJ documents were discounted  
by the regulators

Non-fiction & Non-profit book

[www.rockyflatsambushedgrandjury.com](http://www.rockyflatsambushedgrandjury.com)

# 1987 Rocky Flats Case Predication

“some of the waste facilities there are patently “illegal”).  
(P.4 by USDOE Attorney, 1986).

Briefing for  
Mary L. Walker

for

Meetings with Admiral Foley,  
General Counsel Farrell  
and with the Under Secretary  
On  
Rocky Flats

W

## I. BACKGROUND

We have not been able to close on the Rocky Flats final agreement because of a dispute between the Department of Energy (DOE) and the Environmental Protection Agency (EPA) over EPA's authority under RCRA to issue administrative orders to Federal facilities. The goal in the negotiations was to "finesse" the issue so as to preserve both sides' positions. The negotiators worked on wording designed to accomplish this; however, DOE's General Counsel (GC) found their efforts unsatisfactory. Repeated subsequent discussions between EPA, DOE, some involving the Department of Justice (DOJ), saw a shift in emphasis from trying to avoid the issue to each side focussing on and hardening with respect to their positions on that issue.

The issue of EPA's authority under RCRA revolves around Section 3008 of the statute entitled "Federal Enforcement." That section allows EPA to issue orders (1) where there is a violation of RCRA or (2) where there is a release of hazardous waste from an interim status (i.e., permit application pending) facility. The former provision refers to orders being issued to "persons;" the latter does not. DOE's GC maintains that because the definitions portion of the statute does not define "persons" to include government agencies, an order may not be issued under RCRA to a Federal facility.<sup>1/</sup> However, EPA points out that Section 6001 of RCRA provides that Federal agencies shall be subject to RCRA requirements both substantive and procedural. There are plainly intelligent legal-technical arguments for both sides of the issue; this discussion is not exhaustive of each side's arguments.

GC's real fear of EPA being able to issue an order under RCRA is that the order would allegedly be subject to citizen suit enforcement. The order, being final and valid on its face, would be prime material for a successful summary judgment motion, GC maintains.

<sup>1/</sup>GC is of the view that EPA can issue an order under E.O. 12088. The basis of such an "order" and its effect are somewhat vague, however.

a

**FLIR video of Rocky Flats  
12/15/1988 ~ 10p – 7° F**



# First of 2 Search Warrant Affidavits

## June 1989

AO 126 Rev. 7-87 Affidavit for Search Warrant

**United States District Court**

DISTRICT OF COLORADO

In the Matter of the Search of  
Name, address, or other description of person, premises, or premises to be searched

The Rocky Flats Plant  
U.S. Department of Energy  
Rockwell International Corporation  
Highway 93  
Golden, Colorado 80402

APPLICATION AND AFFIDAVIT  
FOR SEARCH WARRANT  
CASE NUMBER: 89-730M

I, Jon S. Lipsky being duly sworn depose and say:  
Official Title

I am a(n) Special Agent, Federal Bureau of Investigation and have reason to believe  
Official Title

that  on the person of or  on the property or premises known as The Rocky Flats Plant, U.S. Department of Energy, Rockwell International Corporation, Highway 93, Golden, Colorado 80402, (as more particularly described in Attachment 1 incorporated here by reference)

in the State and District of Colorado  
there is now concealed a certain person or property, namely the property described in Attachment 2 (incorporated here by reference) which is  
Describe the person or property to be searched

evidence or the means or instrumentalities of, or the fruits or other results of, criminal violations of the Resource Conservation and Recovery Act, 42 U.S.C. § 6928(d), the Federal Water Pollution Control Act, 33 U.S.C. §§ 1311(a) and 1319(c), and 18 U.S.C. §§ 1001 and 2.

The facts to support a finding of Probable Cause are set forth in Attachment 3, incorporated here by reference.

Continued on the attached sheet and made a part hereof.  Yes  No

Sworn to before me, and subscribed in my presence  
JUN - 8 1989  
Date

Hilbert Schauer UNITED STATES MAGISTRATE  
Name and Title of Judicial Officer

Signature of Affiant Jon S. Lipsky  
SPECIAL AGENT, FBI

at Denver, Colorado  
City and State

Hilbert Schauer  
Signature of Judicial Officer

# 1985 Solar Evaporation Pond Notice Rockwell Felony Plea



# Pondcrete at Rocky Flats, 750 Pad Rockwell Felony Plea



# Rocky Flats Pondcrete at Nevada Test Site



# Spray Irrigation at Rocky Flats Rockwell Misdemeanor Plea



# Areas Marked – No Spray Irrigation Rockwell Misdemeanor Plea



# Solar Pond Leachate Plume



# Merilyn Cook v. Dow, Rockwell

## Denver Federal Civil Case 1990-2016

- 2005 Testified as Subj Matter - Expert Witness
- May 2016 Settlement \$375 million to Plaintiffs

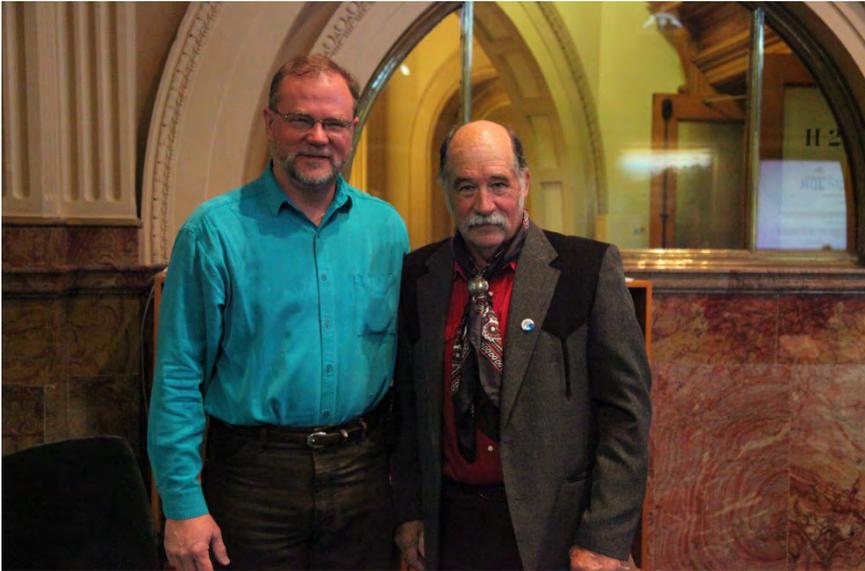


Merilyn Cook & Merrill Davidoff, Esquire

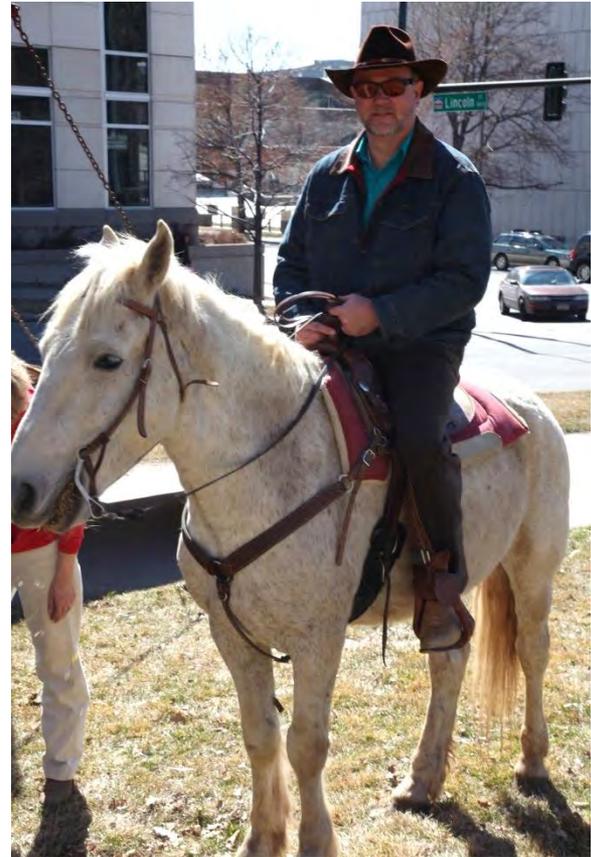


Bartletts, Cook, Shierkolk and Lipskys

# 2010 CO State House Rocky Flats Informed Consent Bill



Jon Lipsky and CO Rep. Wes McKinley



Denver Trail Ride

# University of CA, Irvine Rocky Flats Independent Study



Norma Yokota, Kay Collins, Professor John Whiteley, Patricia Lipsky and Jon

# Rocky Flats Nuclear Guardianship Boulder, CO in April 2011



# Nuclear Worker Advocacy and Rocky Flats since 2010



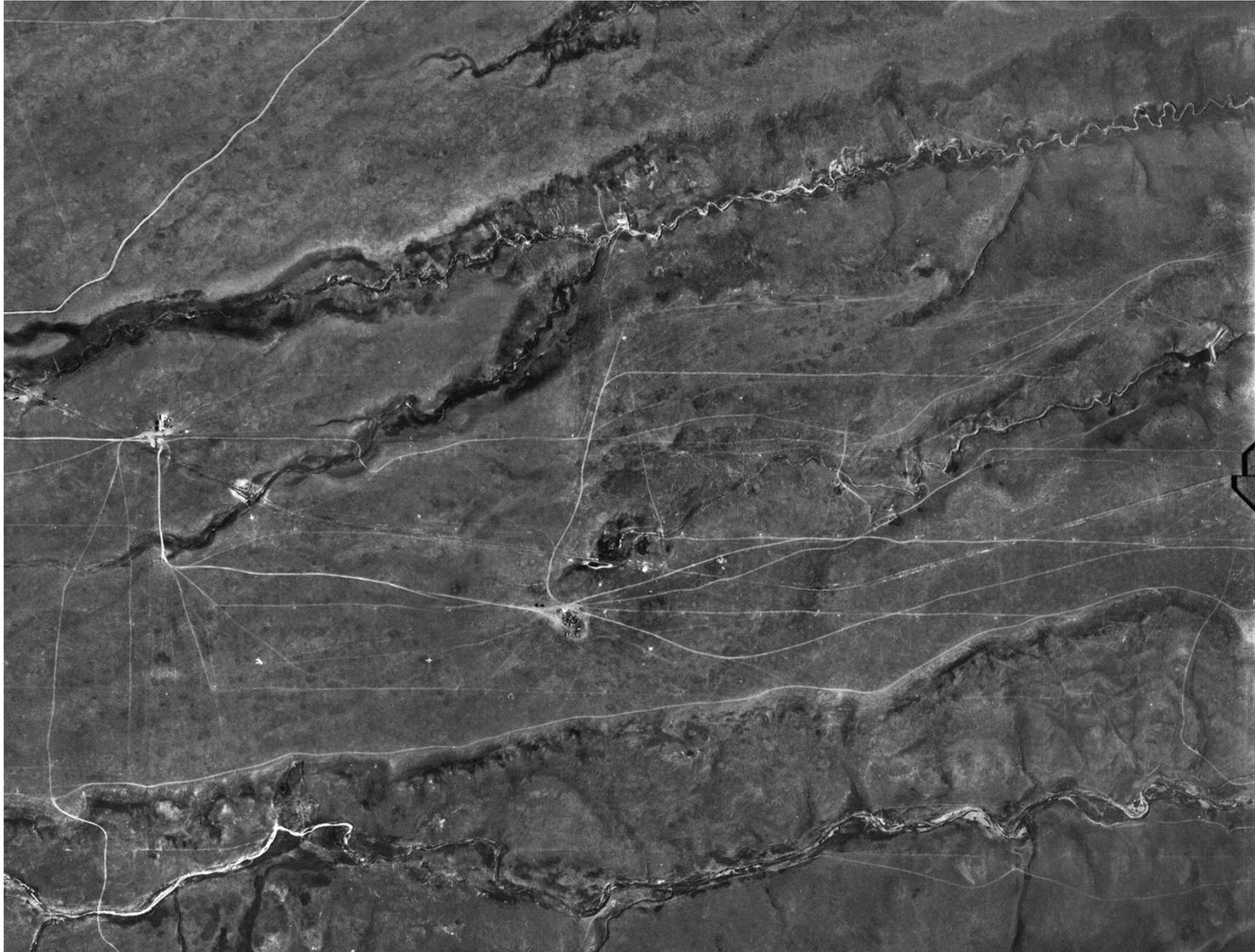
Jon, Terrie Barrie and Deb Jerison, Santa Fe, NM ([www.EECAP.org](http://www.EECAP.org) and ANWAG)

# CU Archives – 100<sup>th</sup> Anniversary Atomic West Project



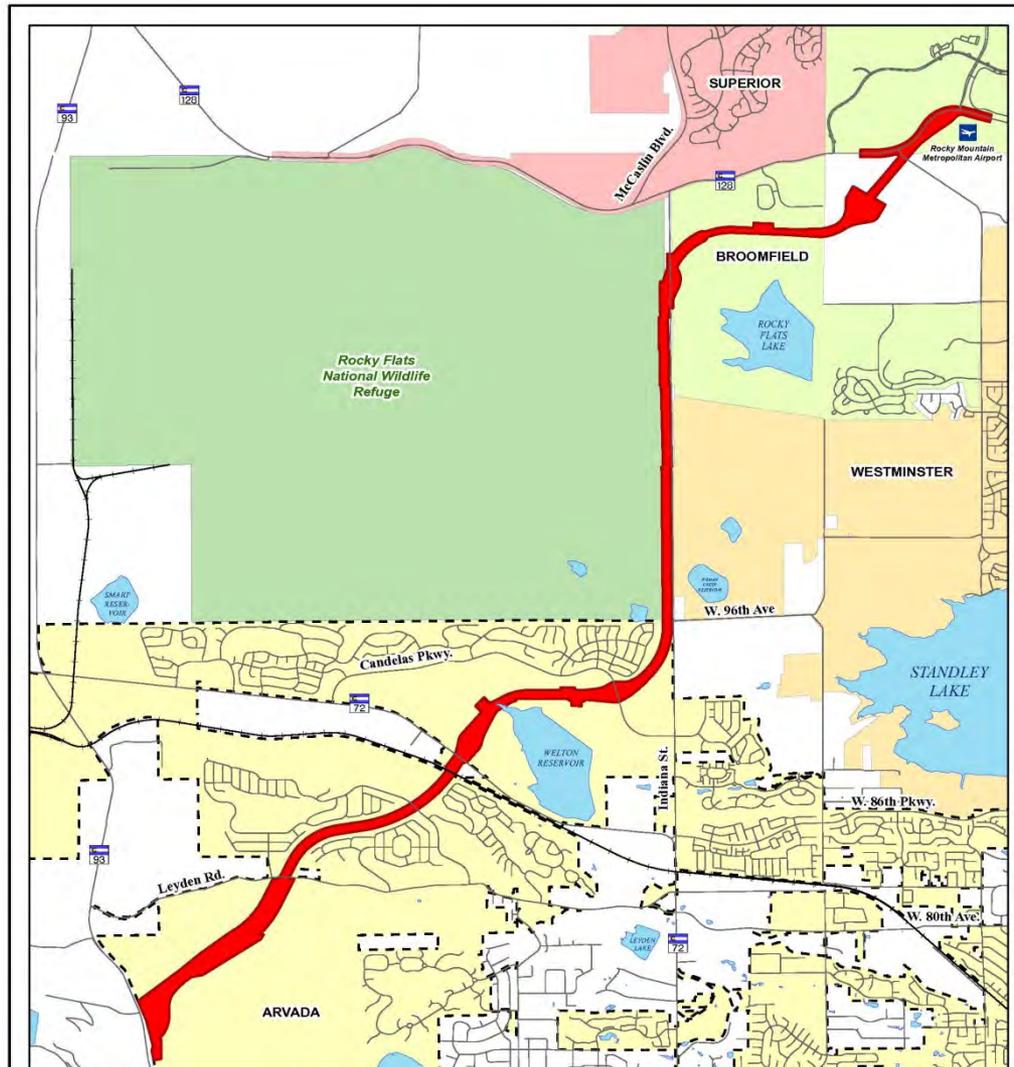
**Katelyn Morken and Jon Lipsky**

# Rocky Flats Nuclear Weapons Plant Pristine in July 1951



# Jefferson Parkway Connector

## A 1960's Concept along Rocky Flats

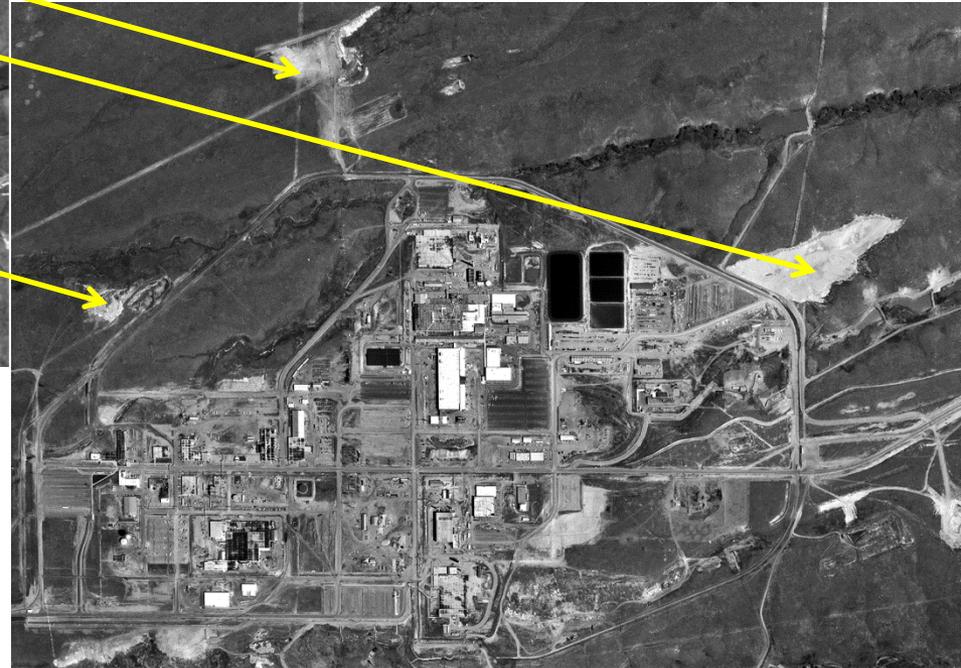
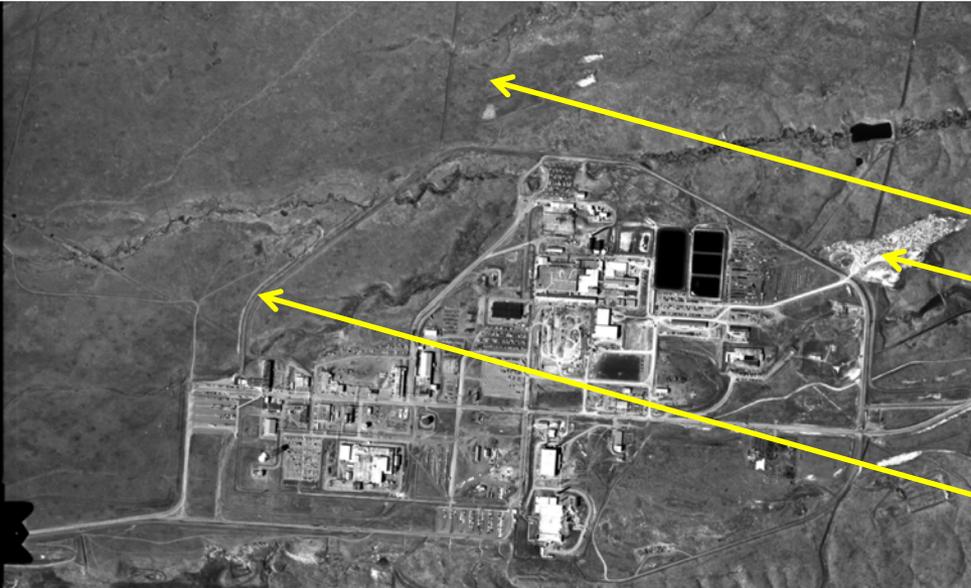


- Waste burial practices
- Undocumented Waste sites
- Fires/Criticalities/Accidents
- Dr. Ed Martell (1970)
- Krey-Hardy Isopleth (1970)
- Buffer Zone increased (1975)
- GWR contamination
- Standley Lake contamination
- Contractor clean up
- TIMES CHANGED Post-1975!

# Rocky Flats Nuclear Weapons Plant

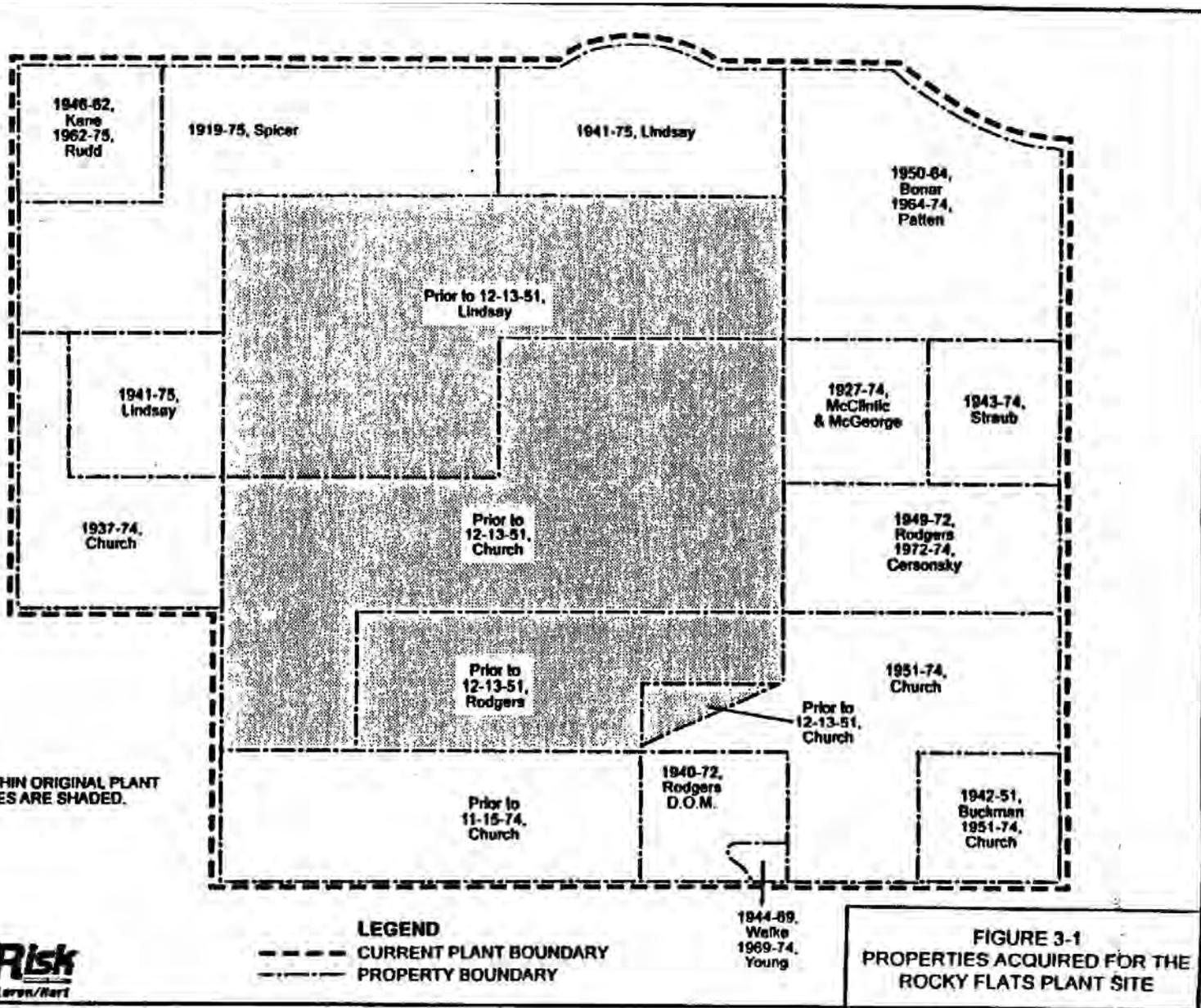
10 Apr 1968

24 May 1969

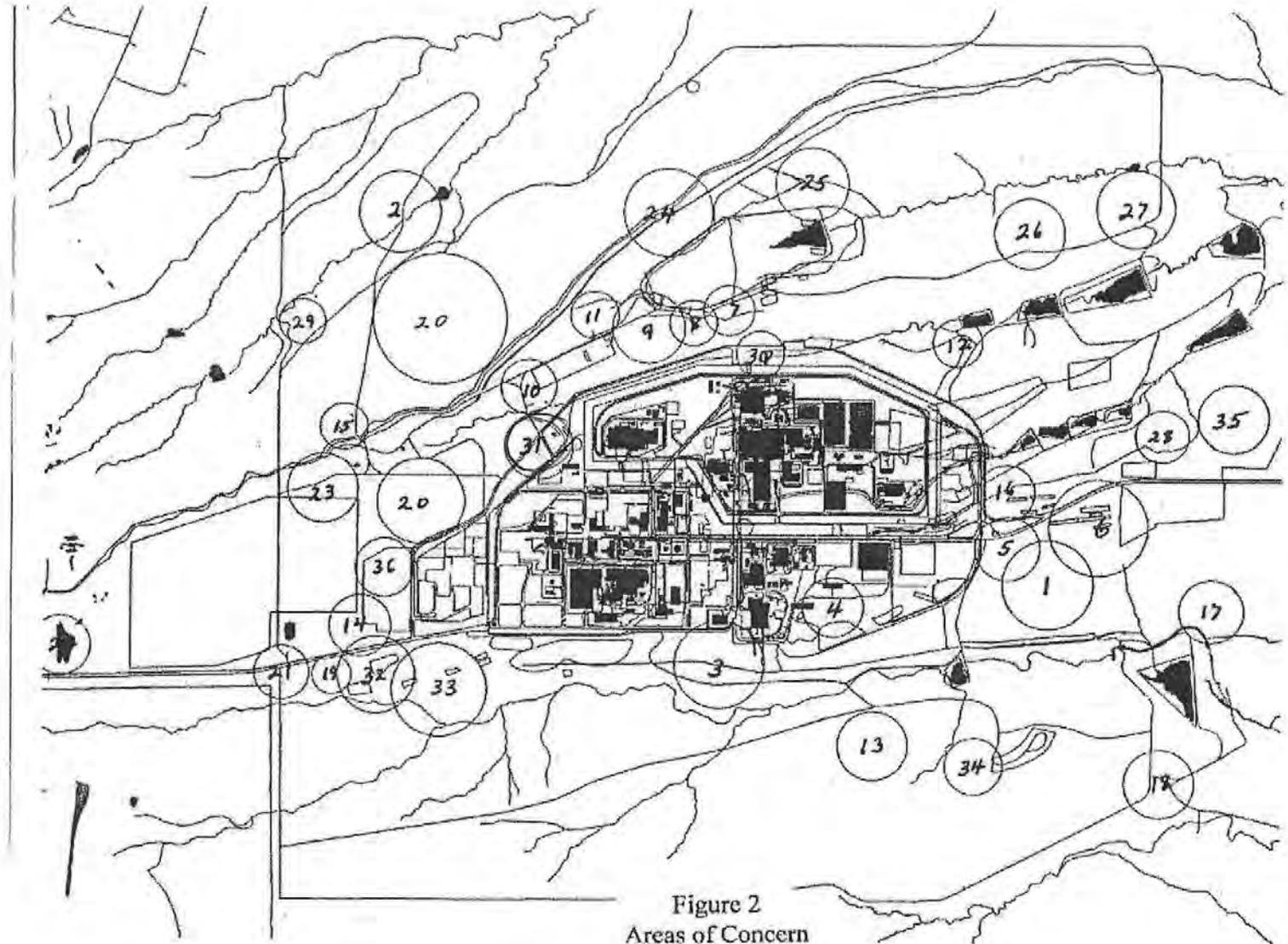


Photos courtesy of Colorado Aerial Photo Services, Denver © 2018  
Not for commercial use

# Circa 1965 – Extent of Rocky Flats (Gray)



# 1999 BZ Contamination Review



# 1999 BZ Contamination Review

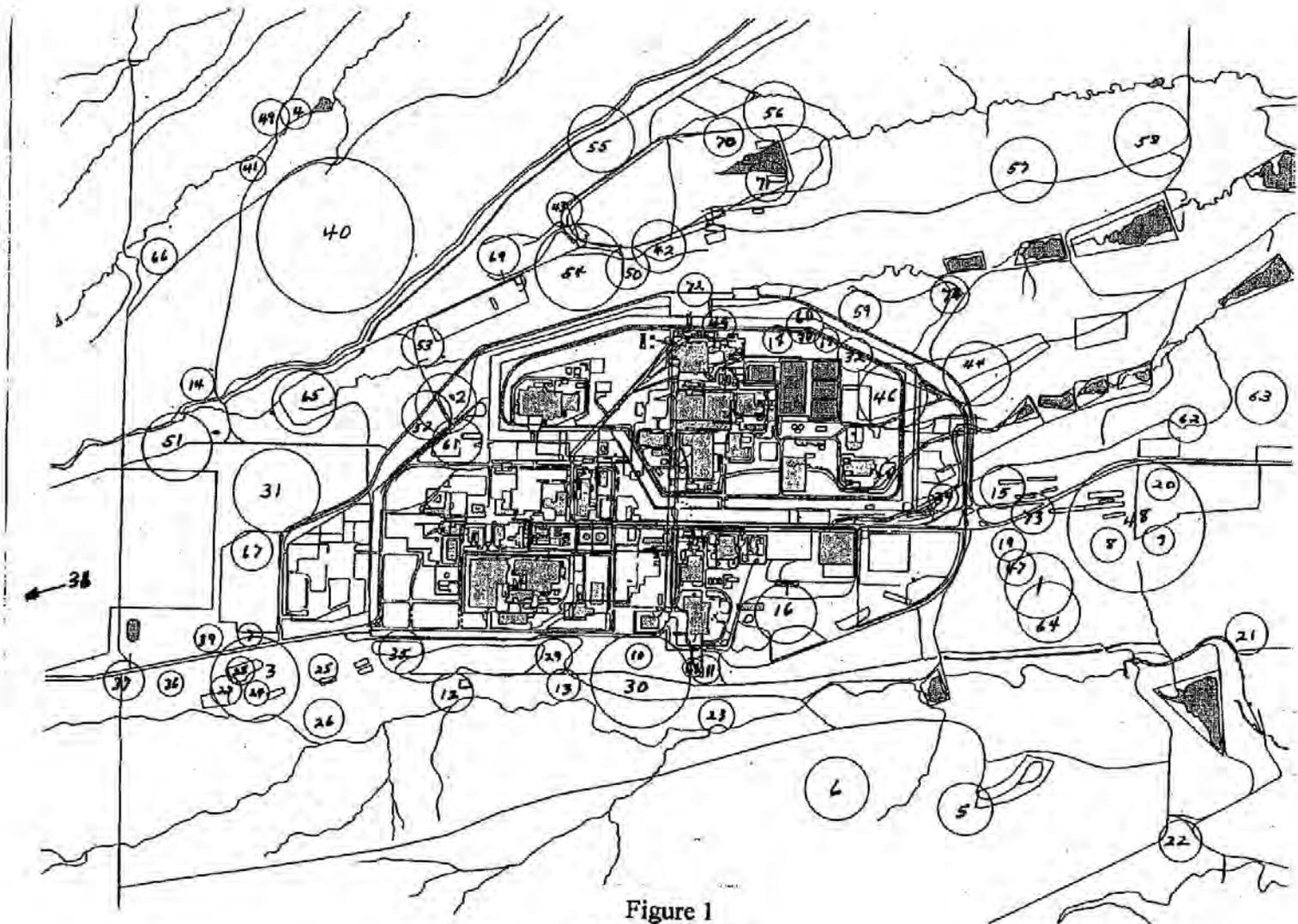


Figure 1  
Areas of Interest

# CDPHE Buffer Zone Review

## 1999-2003

- 28 Areas of Concern – no further action
- 25 Areas of Interest – not addressed
- 80 million gallons/year of Rocky Flats effluent to STP - Pond B-3
- STP sludge to OLF (~ 1968) then PLF
- B-3 effluent to North and South Spray Fields (NPDES Permit)
- Solar Ponds closed in 1985
- Solar Ponds – RCRA Closure – 1986 then 1989 – No Closure
- Despite process knowledge – OLF and PLF remain for treatment
- Ra226/228, Sr89/90 and Tritium not analytes of interest?
- U236 not quantified for anthropogenic uranium

# “Standards for Clean-Up don’t Address the Hazards to Humans”

- Only the environmental samples on or after June 28, 2001 were considered for the Comprehensive Risk Analysis. [**Subjective Science**].
- Environmental samples for the 1986 CEARP, 1987 RCRA Part B Permit and June 1989 FBI/EPA search warrants were discounted. [**Quantified Science**].
- The convenient subjective science determined (UUUe) that the RFNWR is safe.

# Rocky Flats Subsurface Features Pits, Trenches and Landfills in Place

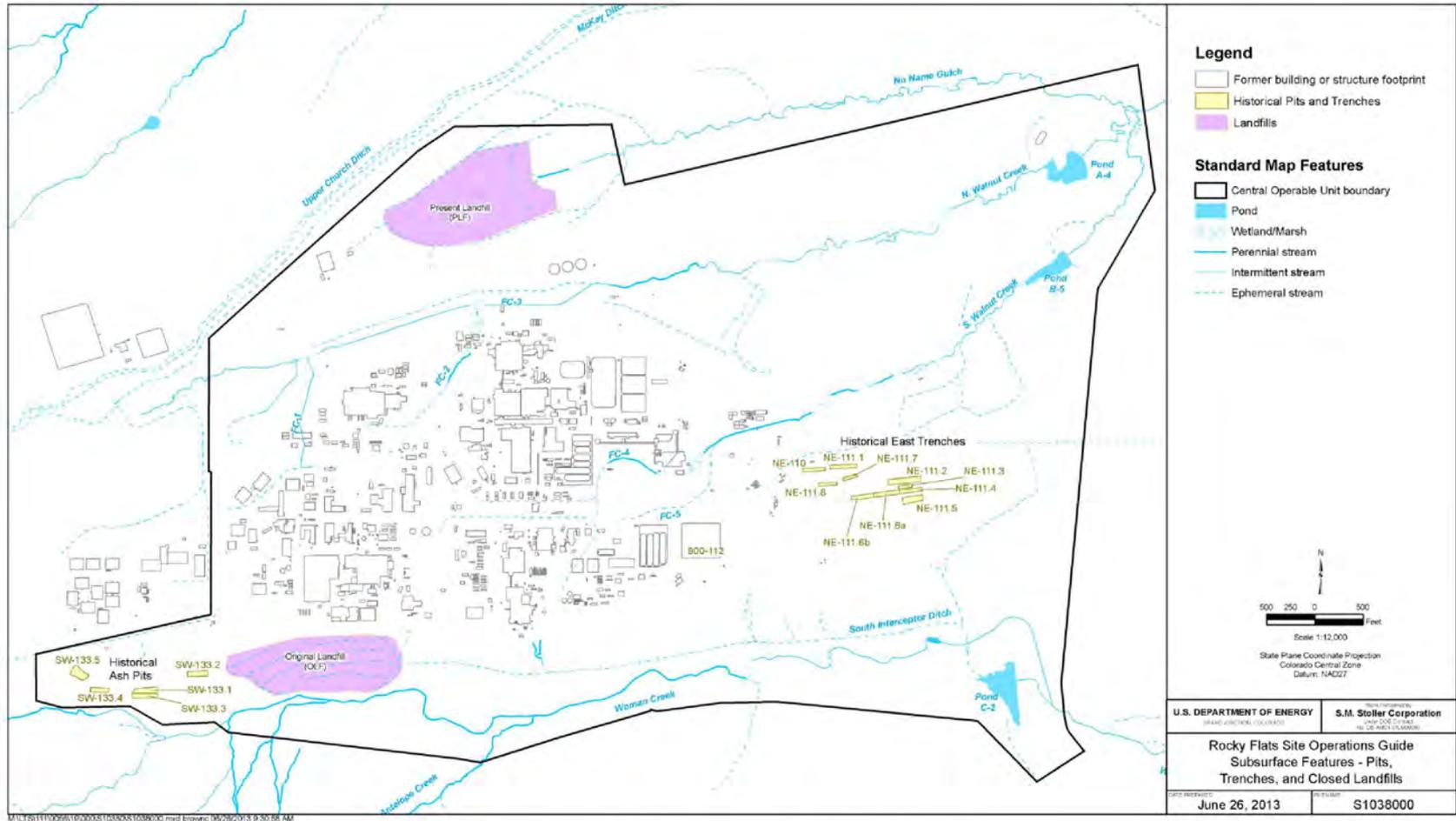


Figure 4. Subsurface Features—Pits and Trenches (Reproduced from the RFLMA)

# Rocky Flats Subsurface Features

## Pits, Trenches and Landfills in Place

- Transfer lines, Valve vaults not decontaminated
- Underground springs under B-771
- Independent verification needed, including T-1/ T-2
- USDOE notion that animals don't burrow below 8 feet
- USDOE notion that actinides remain in place

# **Nuclear waste is not your friend.**

- The Rocky Flats National Wildlife Refuge is not quantitatively safe for public health or the environment.
- The Jefferson Parkway should not be built, air monitoring ceased in 1994.
- The Rocky Mountain Greenway needs to go around Rocky Flats, not through it.
- Nuclear workers deserve their unique compensation program (EEOICPA) and a quality of life for their Cold War work.

# Many thanks!

- Summary presentation, citations available
- My email: [jon@jonlipsky.com](mailto:jon@jonlipsky.com)
- Please ask your questions!

**APPENDIX A**  
**Transcript of Kristen Iversen's Presentation (provided by Kristen Iversen)**

Kristen Iversen

JPAC Meeting, May 17, 2018

I want to thank you all for having me here tonight. I appreciate the opportunity to speak. I also want to thank Randy Stafford not only for his technical skills in setting this up and allowing me to participate but also, I want to thank him for the position paper he prepared for this particular meeting. It's an excellent summary and I hope people have had a chance to look at it. I don't have time to go into detail in that paper but I will be making reference to that. First of all, I want to tell you a little bit more about who I am. I'm going to assume that most people are not familiar with the book I wrote. I am a professor, a writer, and a journalist. I hold a PhD from the University of Denver. I am the author of several books and I've taught at universities around the country and I've lectured around the world. I currently head the PhD program in Nonfiction at the University of Cincinnati.

I'm here today to talk to you about some of the public health effects of Rocky Flats. I guess I represent a kind of boots-on-the-ground approach to some extent. I grew up near Rocky Flats. I was born in 1958. When I was ten years old, we bought our second house in Arvada which was in fact even closer to Rocky Flats, specifically -- of course we were unaware of what was happening at Rocky Flats. My siblings and I, we rode our horses in the fields around Rocky Flats, up and down Indiana -- some of you who grew up in the area, you might remember back when that road was not as busy as it is now. We used to ride our horses up and down that road and the boys in my middle school and high school would race their motorcycles. So, I'm very familiar with that area. We swam in Standley Lake—of course, we had no idea that the area was contaminated. By the time of the 1968 fire there had already been many fires, more than 200 fires at Rocky Flats. There was never any information available to the public, there was never any warning, no evacuation—although many people feel that there should have been an evacuation, particularly during that second big fire. When my parents bought their house in the Bridledale neighborhood, they had to sign an Advisory Notice, just like everyone did at that time, acknowledging the fact that they knew there was plutonium in the soil, that it had been confirmed and there was a health risk. That Advisory Notice was later done away with, although of course that contamination still remains. There was never any offsite cleanup.

Later, like many of the people in my neighborhood, I went to work at Rocky Flats myself. As a writer, my job was to meet with Managers and Project Managers and prepare reports that were sent on to Albuquerque, Washington D.C., and other Department of Energy offices. My book, *Full Body Burden*, which I began at that time, involved more than ten years of research. It was heavily fact-checked by people both within and outside the nuclear industry, and I did a tremendous amount of research with the help of research assistants for this book including interviewing workers, DOE officials, Rocky Flats officials, residents in the area, hundreds and hundreds of interviews.

What I want to do today briefly is really kind of put a human face on some of the things that you've heard tonight and some of the things you may have heard about Rocky Flats. As I mentioned, I grew up in Bridledale, that is adjacent to the neighborhood of Meadow Gate.

*Please note, this meeting summary reflects the perspectives articulated by the individual panelists and individual JPAC members. The perspectives vary and not everyone agrees with all the statements that were said.*

Those were two of the earliest home developments out near Rocky Flats, very near Stanley Lake. Nearly every house in our neighborhood had cancer.

The first case that we knew of for sure was Kristin Haag, the daughter of the builder Rex Haag, the man who built our house. She was diagnosed with bone cancer at age eleven. They lived just up the street from us. She had her leg amputated and she died a few months later. Rex Haag tried to sue Rocky Flats and he was unsuccessful in that suit. The neighbor directly across and up the street from our house had a boy the same age as me; in fact, he was my first “crush” in junior high school. He was diagnosed with testicular cancer and had surgery, and the family was so concerned about contamination from Rocky Flats and the cancers that they saw in the neighborhood that his family sold their house and moved away.

Another school friend and neighbor, a family up the street, had a thyroid tumor removed at age seventeen and had prostate cancer in his early thirties. I want to talk a little bit about Tamara Smith Meza. If you’ve read my book you know this story. The Smith family lived just around the edge of Stanley Lake, just around the corner from our house, directly downwind from Rocky Flats. It’s a Mormon family, they lived off the land, they raised their own vegetables. All the kids in that family have health issues. The worst was Tamara. She’s about – she’s younger than I am – she was in her early twenties when she was diagnosed with brain cancer. Tamara Smith Meza has lived for more than ten years with recurring brain tumors and cancer. She’s had at least five brain surgeries. Her doctors in Colorado and New York feel confident that her illness is likely tied to Rocky Flats. There have been cancers and illnesses in my own family, not just cancer but also thyroid issues, autoimmune disorders – things that might come not just from plutonium but from the many other radioactive and toxic poisons that entered our air, water, and soil from Rocky Flats.

But I don’t want you to think that this is simply anecdotal, or personal, or just something that happened to a few people in my neighborhood, or something that happened in the past. It hasn’t stopped. Since my book came out I’ve received a deluge of emails, hundreds, hundreds, hundreds of emails. I’d like to read to you from just a few of these so that you get a sense of the voices and stories of the people who were such an integral part of what we are talking about today. I’m just going to quote from just a few, as a sampling. These are all emails that I’ve received within the last two years.

First one: I grew up in Arvada, went to Fitzmorris Elementary, and graduated from Arvada West. We played in Ralston Creek. There were approximately 80 kids in my grade; we’re all in our early fifties now. Of the 20 or so I’ve kept track of since high school, my own son was diagnosed with testicular cancer at age 19 (in 2009); a friend’s son is a leukemia survivor. Another friend’s sister died of brain cancer in her 20s; another’s sister is battling her third recurrence of ovarian cancer; and one friend’s father, a Rocky Flats worker, died of brain cancer. Aside from the father, all were diagnosed before age 40. We are all longtime Arvada residents.

The second one is from a Social Worker: My family grew up across 80th from Meadowgate and our closest friends still live in Meadowgate. I just turned 34, and my parents moved into their current house near Sierra Elementary when I was 6 months old. I am the youngest of three; my brother will be 40 this year and my sister will be 38. My brother was

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diagnosed a few years ago with M.S. My father was diagnosed with Parkinson's a year later. In 2012, I found a tumor in my thyroid that they thought was cancerous, so I had a full thyroidectomy. My sister had surgery for breast cancer and she has another surgery next week. And then in January of this year, my mom was diagnosed with leukemia. As you can imagine, we are asking ourselves what the hell is going on. How could our family have this much bad luck? It doesn't make sense.

This one, from a local veterinarian who lives near Rocky Flats: We are writing to let you know of our situation. My daughter, age 52, is currently processing through Stage 4 brain cancer and is in hospice. She has lived her entire life in Golden and Arvada; she lived with their two children on a ranch in an open field of 100 acres near Rocky Flats where it was constantly windy. Her husband died in July 2012 of brain cancer after a two-year battle. My husband was born and raised in Denver and had several veterinary clinics, in California and Colorado. He took over a veterinary clinic in Arvada near Rocky Flats—[KI: I'm not going to mention the name of that clinic for now] -- when the owner was diagnosed with lymphocytic leukemia and died. He [the husband] was amazed to see the alarming number of cancer cases in animals! It was so much higher than average that he asked other local veterinarians about it, and they seemed to think that the incidence was yes, unusually high, but normal for that particular area.

Here's another one, in 2016: "My uncle lived near RF and my father lives in Westminster. My father had testicular cancer a couple of years ago and was recently diagnosed with Primary CNS diffuse large b-cell lymphoma. He had a brain tumor removed a couple of weeks ago, and now he is undergoing extensive chemotherapy treatments for the next couple of months. We don't understand it. He always took care of his body. There is much unexplained illness in our family.

The next one I want to read to you is very recent and it comes from an area – I've been getting a lot of emails from people who live in or near Candelas: My young daughter was diagnosed with AML leukemia when she was 11 months old. She is now 17 months old and we are still in the hospital fighting for her life. She relapsed in December... now we are trying to get her back into remission so that she can have a bone marrow transplant.

Another interesting one from a couple of months ago: I left Colorado in late 1995 and returned in 2001. I was stunned by the huge amount of development around Stanley Lake. After hearing my reaction to the development, my realtor whispered that her grandmother had moved to a property near the lake a few years earlier with her three dogs. Within three years, the dogs were dead. She noted that she wasn't supposed to disclose information on risks or incidents associated with properties near Stanley Lake or near Rocky Flats but she felt it was okay to share with me since I was already aware.

Speaking of animals, I get lots of emails about animals. One of the things I write about in my book is all the horses – we had lots of animals in our neighborhood – I write about how strontium was found in the bones of horses. This is a recent email: We live near Rocky Flats and we got a wonderful yellow Lab. As a puppy, she was a nonstop digger in the yard where she buried her bones and always knew precisely where to find them. She developed cancer in one of her hind legs, which was amputated. The expectation from the vet was that she would have at least another year-and-a-half with us. Sadly, the cancer spread quickly and we had to have her euthanized.

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Another animal story I want to emphasize that I think people maybe aren't aware of. If you've grown up in the area, or ever rode a horse or motorcycle down Indiana back in the day, there used to be a turkey farm along Indiana called Jackson Turkey Farm. I interviewed the family, the parents and the kids (we all went to school together). The family talked about raids on the farm where the DOE would show up and test turkeys. The family was told not to tell anyone. I have a lot of questions about this. What happened to that information and the DOE data on those turkeys? That was testing that went on for years.

I'm going to emphasize again that these are not just old stories, this is a problem that is continuing to the present day. I think I've become kind of a lightning rod for some of this because of my book, because I have a website. One of the good things that's happened out of all of this is that we have so many grassroots organizations. Of course, we have the Rocky Mountain Peace and Justice Center, Rocky Flats Downwinders, there are so many others. I won't take the time to go into detail about all of them, but I'm very excited to see that kind of effort. I mean, it's very important. I think we have to really face what's going on here. One of the things that's been most frustrating for me is that I have been under this deluge of stories from people who are sick, who have sick children or sick animals, and I have – there's nothing I can do to help them. There's never been any public health monitoring or any assistance available for residents around Rocky Flats. The workers have received assistance, they've received acknowledgment, they've received compensation. The Cook v Rockwell class action lawsuit alone represents more than 13,000 people who believe that their health was impacted by what happened at Rocky Flats. That did not begin as a property lawsuit; it began as a health lawsuit. When I get all these emails, I don't have anything to tell these people. Where to go, how to get help. They're told to – it's the same pattern of silencing that was going on when I was a kid. I see these patterns continuing today, particularly at Candelas. Let's not talk about it, let's not look at it, let's pretend it doesn't exist. And yet the pattern of illness that I see in these emails indicates that we should be tracking – we need to be tracking the population at Candelas and in all those neighborhoods around Rocky Flats.

I want to share just one that just came in this week. This is from someone who just moved with her husband into the Meadowgate neighborhood, adjacent to Bridledale. She writes: We just bought our house from the original homeowners. She talks about how she loves the neighborhood (we used to love the neighborhood! It's a great neighborhood, a beautiful area, we had horses, lots of animals) I love this neighborhood ... We plan to have children in this house. But at no point in the home buying process did anyone ever tell us about Rocky Flats, did anyone ever tell us that there was a risk ... We want to move. We don't want to raise children here. We don't know what to do.

So, this is a very challenging situation to deal with. There is no public health monitoring or medical assistance for people who live or lived near Rocky Flats. There is no hotline, no clinic, nowhere for people to turn for help and information. These stories, these illnesses, are too persistent and too consistent to be merely anecdotal or emotional. One of the things that Randy Stafford mentions in the position paper that he prepared, but of course there are many other places where you can get this information, the initial results of the Rocky Flats Downwinders Health Study show very clear patterns of disease that are tied to

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the plume patterns of those fires in the 1950s and 1960s in particular, and we're seeing some very interesting consistent patterns.

So, I guess I want to go ahead and close and then give you a chance to ask questions. There are so many stories I could read you. Like I said, I wanted to put a human face on all of the statistical data that you've heard. There's another side to the story. A more human side. I think I'll close by saying that those who deny the existence of health effects in people and animals in this area and the ongoing serious and devastating health legacy of offsite contamination at Rocky Flats, particularly around the area we are talking about tonight, they have their blinders on. They are doing us a grave disservice. It's not only ignorant I believe but unethical to deny the existence of these very real health issues and how costly they are. And I mean that not just in terms of economics and health but the psychological impact that this facility has had on our community. I think it's imperative that we understand more fully the ongoing health effects of the last fifty years at Rocky Flats, I think we need to look very closely at neighborhoods around Rocky Flats, not just at cancer but some of the other things that we're seeing as well. And, I just – we need to be cautious. I'm opposed to the Jefferson Parkway. Please take these stories, these people, these children, even these dogs and cats and horses, under serious consideration. Plutonium has a half-life of 24,000 years, never mind all the other stuff that was put into my neighborhood, our neighborhoods. Including carbon tetrachloride, which may explain some of the other things that are going on as well. This is not something that's going to go away or lessen with time.

Thank you for your time and consideration.

### **Questions:**

Kristen, could you maybe mention some of the work you're doing now that's related?

A: In summary, here I talk about my ongoing national and international lecture tour about Rocky Flats; the new forthcoming book of articles and essays by various experts and authors *entitled Doom with a View: The History and Legacy of Rocky Flats*; and I discuss how *Full Body Burden* is being made into a documentary with a release date of May 1, 2019. I discuss ongoing projects by other artists, writers, and grassroots organizations including new podcasts, radio programs, and projects on the internet. I emphasize that there is a great deal of information related to the grand jury investigation that is still sealed by the court and there is still much about Rocky Flats that we don't know.

Q: Do you have any comments on the presentation on the health studies?

(30 seconds) (Briefly), I think there are some good things about those studies and there are some very serious flaws in some of those studies. Again, I refer you to the paper that Randy Stafford prepared that does a nice summary of some of the criticisms of some of those studies and how that information has been mediated. And how it flies in the face of some of the studies that have been validated.

I refer you to the story of Dr. Carl Johnson, who was the first health director of Jefferson County to oppose development – I don't have time to get into it, I wish I did – at the very minimum, go to Wikipedia and get the brief summary. He was fired from his job for— essentially this is just a real quick summary—for wanting to prohibit any home development within ten miles of Rocky Flats. There was contamination data and health

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data to support that. He was fired from his job and he later won a whistleblower lawsuit against Jefferson County. I will stop there. Thank you.

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**Jefferson Parkway Advisory Committee (JPAC)**  
**July 19, 2018**  
**Westwoods Police Department Station Community Room**  
**6644 Kendrick Drive, Arvada CO, 80007**  
**Meeting Summary – FINAL**

**ATTENDANCE**

*Participants:* Bini Abbott, Rebecca Kallio, Britta Nelson, Ian Owens, Bill Ray, Brent Smith, Randy Stafford, Jill Strauss, Jerry Taylor, Brett Vernon, and Marc Wills

*Facilitation:* Heather Bergman, Sam Haas

**UPDATE ON JPPHA BOARD JUNE AND JULY MEETINGS**

- During the Jefferson Parkway Public Highway Authority (JPPHA) Board of Directors' April 2018 meeting, CDM Smith presented the results of their traffic and revenue study.
- During the JPPHA Board's July meeting, the Board decided to move forward with hiring a transactional attorney, a highly-specialized firm to develop documents related to the procurement of a long-term concession. The Board has received 11 responses to its request for qualifications and has narrowed down the list to two finalists. The Board decided to hire a transactional attorney because the Board authorized the development of a private partner request for qualifications (RFQ) last month, which is the first step in selecting a private partner for the Jefferson Parkway project. There is a lot of interest among potential private partners, as the Jefferson Parkway is currently the only greenfield risk-transfer project in North America.
- JPPHA plans to release the RFQ at the end of July. The process typically takes 90 days: there will be time for proposers to ask questions, and JPPHA may choose to issue an addendum based on these discussions. At the end of the process, the goal is to have up to three qualified respondents who will move forward through the request for proposals (RFP) process. It takes a lot of time and money for proposers to develop a response to the RFP (RFP responders could spend between \$3-5 million on their response). The RFP process will take eight or nine months, after which the Board will review proposers' best and final offers and select a proposal. The process will likely wrap up by the end of 2019.

***Clarifying Questions***

Participants asked clarifying questions about the update on JPPHA Board decisions regarding cost feasibility and traffic. Questions are indicated in italics, followed by the response.

*Will the Jefferson Parkway be a highway with the option to take a toll road or will it strictly be a toll road?*

It will strictly be a toll road.

*Will recommendations from the JPAC be integrated into the RFQ or RFP process?*

JPPHA will likely integrate the JPAC's recommendations into the RFP process.

**UPDATE ON JPPHA BOARD DECISIONS REGARDING COST FEASIBILITY AND TRAFFIC**

- During the April Board Meeting, Ernst and Young (EY) provided financial analysis to demonstrate the feasibility of a public private partnership (P3) procurement for the Jefferson Parkway, presented key opportunities and challenges related to advancing the project, identified a process for efficiently transferring risk to the private partner, and provided strategies for advancing the project through a P3 procurement.

- Over the past few months, EY's feasibility analysis approach consisted of three steps: 1) A survey of key transaction precedents to evaluate approaches to project risk allocation; 2) A solicitation of industry feedback from active P3 market participants; 3) Preparation of feasibility scenarios.
- Different delivery alternatives were considered, including a public-design-bid-build option, a public-design-build option, and a P3-design-build-finance-operate-maintain option. With public-design-bid-build projects, the public holds the risk for everything from design and construction, roadway operation and maintenance, tolling, and financing. With public-design-build options, the private partner holds the risk for design and construction and the public holds the risk for the rest. With the P3 option, the private partner holds risk for all the components. Examples of P3 projects in Colorado include US 36 and Central 70.
- The P3 delivery introduces private equity as a source of financing for construction. The private equity can offset the required upfront public contribution, which may be required if the project is delivered via a design-build or other publicly-financed delivery method.
- The JPPHA Board and financial advisors will consider several factors when selecting a P3 option, including project size and complexity, project risks, schedule, market appetite, public control, and financial feasibility. Private partners will be selected through an RFQ then RFP process and screened based on their experience, technical approach, financial capacity, and financial proposal.
- CDM Smith estimated that the per-mile cost of the Jefferson Parkway would be 29 cents for 40 years. They did not factor in the length of the term and interest rates. E-470 is charging about 36 cents per mile. The JPPHA Board concluded that the Parkway could transfer 100% of the revenue risk to the private sector.

*What happens if there is a miscalculation and shortfall in the private partner's funding? If there is a disaster, will the state have to come up with the subsidy?*

There is not a subsidy agreement. The private partner will bear the risk. The public partner supplies the right of way and owns the project. When contractors for the Northwest Parkway were concerned that their revenue forecast did not meet expectations, the risk fell to the public until they negotiated an agreement with Brisa (the private partner) to transfer the risk to the private operator. E-470 quarterly reports now indicate that the tollway received \$170 million in transactions last year, and its revenue and projected utilization are projected to keep growing. The JPPHA Board will make decisions about private partners based on best and final offers and negotiate the terms of the project. JPPHA believes it reasonable that will not be a need for public subsidies on this project.

*Are there any examples of similar projects that have gone wrong?*

A toll road in Indiana had a concessionaire who got into so much debt that the State had to step in and restart while it was still in the construction phase. In Virginia, anybody could call their project a "public-private partnership" which created a lot of confusion and the development of some projects that should not have gotten off the ground. In Maryland, there was a change in administration, and the new governor decided to abandon a project that was well underway. Problems arise when the project is not thought-out.

*Do potential proposers know about the risks associated with radioactive materials from Rocky Flats?*

They have had access to the body of literature about Rocky Flats and will have to determine whether they are willing to bear the risks associated with developing the area.

*Does the cost estimate for the Jefferson Parkway include additional structures, such as detention structures, bridges, etc., or is just the cost of the proposed roadway?*

The estimated cost of the Jefferson Parkway is \$250 million. The cost estimate was for a 10% design for the entire Parkway and did consider bridges and drainage structures. The estimate included over 100 items and was independently checked. The bridges were estimated by square footage. However, structures such as a multi-modal path were not included in the estimate. The estimate did not include a provision of special mitigation beyond that required by the State; the estimate included a placeholder price for standard mitigation practices. The contractor will determine the final budget and design.

*Have any consultants taken geologic borings (soil samples) to determine if there is a stable soil foundation?*

PB Americas took soil samples as part of their analysis in 2010, and this information was used to inform the expected high-level bridge types. Some groundwater samples were taken at the Hotchkiss property.

*Will the private partner be aware of previous historical issues in the area (e.g., the Flatirons Mall, which had to be rebuilt because the contractor had little experience working with expansive soils)?* Historical issues may be a part of the risk proposition wherein the concessionaire spells out what it is willing to take on. The concessionaire would benefit from learning about the potential challenges.

*There was some controversy during the final design process of Highway 36 with the contractor and a lack of transparency about the recent expansion. Has the JPPHA Board examined ways to ensure that there will be transparency throughout the project?*

The biggest issue with Highway 36 was that there was a perceived lack of transparency about the toll rates (i.e., how tolls would be charged and who set the rates). The JPPHA Board is committed to being transparent, with the understanding that in public-private partnerships there are certain aspects of the project that the private partner considers to be proprietary.

*Will the final contract include mechanisms for the private contractor to increase the toll cost?*  
That is not yet determined.

*What is the JPPHA Board's vision for the future of the JPAC?*

The JPAC should recommend what it would like its function to be in the future.

*Will there be an independent review of the design?*

The JPPHA will analyze and respond to various aspects of the project design.

#### **FEDERAL AVIATION ADMINISTRATION (FAA) UPDATE**

- On July 19, the JPPHA Board took a tour of Rocky Mountain Metro Airport to understand the physical distance between the runway and the proposed Parkway.
- The FAA has two independent issues with the Jefferson Parkway: 1) The scope of the environmental review (they started from the position that the environmental review should encompass the entire Jefferson Parkway alignment from SH 128 to SH 93. then refined the scope to within the confines of the airport property); 2) Their concerns about safety. The FAA is concerned that a plane may have to land too soon and could fall on the Parkway. They would like for the Jefferson Parkway to adopt an alternative that lowers the road another 20 feet and places a concrete lid on top of the roadway.

#### **PRELIMINARY THOUGHTS ON POTENTIAL RECOMMENDATIONS TO THE JPPHA BOARD**

JPAC members suggested and discussed potential recommendations to be presented to the JPPHA Board. The group did not make any decisions about the recommendations.

### **Recommendation #1**

- JPAC should send the following material from the May JPAC meeting to the JPPHA Board to consider and review:
  - Randy Stafford's position paper
  - Jon Lipsky's presentation (PowerPoint and the meeting summary)
  - The video tape recording and transcript of Kristen Iversen's talk.
- The JPAC should specify what they would like the JPPHA Board to do with this information. It is important that the JPAC send the information that it has learned to the JPPHA Board.

### ***Group Discussion***

- Other speakers at the May meeting (from the Colorado Department of Public Health and the Environment) should send their presentations to the Board.
- The recommendation should clearly state the action that the JPAC would like the Board to take. The JPAC would like the Board to carefully consider the materials that JPAC sends to it and respond with a statement about how it will incorporate the information into future decisions.
- JPAC may want to consider recommending that a subset of JPAC members present the package of recommendations to the Board. Peak Facilitation will prepare a final report that summarizes the JPAC's process and recommendations.

### **Recommendation #2**

- The Board should require independent testing for plutonium and other contaminants before allowing any design and construction-related, surface-disturbing activities within the Indiana corridor of the Parkway and should require public posting of the testing results. Results showing elevated levels of contaminants should be reported to CDPHE and any other relevant agencies. If contaminant levels exceed CDPHE's standards, construction should pause while mitigation measures are followed, then a resampling should be conducted.
- Resampling is important because there are unknown factors and conflicting reports about the adequacy of the clean-up and remediation of contaminants at the former Rocky Flats nuclear weapons plant site and surrounding areas, including Indiana Street. Publicly sharing test results would improve the community's understanding of the issue, help build trust, and improve transparency. Reporting elevated levels of contaminants to CDPHE would allow for a proper response and would improve CDPHE's monitoring data of the site.

### ***Group Discussion***

- Several independent entities could conduct independent testing. One is Michael Ketterer, who is a retired analytical chemist and has made a career of studying plutonium; he used to work for the Environmental Protection Agency and is retired from academia. Another potential option is Marco Kaltofen, who has done many independent studies and recently published a paper about nuclear workers tracking contaminants outside of nuclear facilities. Six local governments applied for a federal land access grant program to fund construction of trail crossings on the Rocky Mountain Greenway Trail, and some of the governments made their approval contingent on future testing, which will be conducted by a contractor called Engineering Analytics. As part of this recommendation, the JPPHA Board may choose to issue an RFP to find a suitable independent contractor for this work.

- During preparation for construction of the Parkway, the contractor will have to make borings more than a foot deep to find suitable bedrock. There may be an opportunity to take soil samplings at the same time, which would increase efficiency and decrease costs. However, the sampling concentration may vary for a structural concern versus an environmental concern.
- The independent testing is unlikely to find more or less plutonium than the existing studies; however, there are questions about the significance of the existing plutonium levels and about how much contamination is safe.

### **Recommendation #3**

- JPPHA should change the alignment of the Jefferson Parkway to go up Highway 93 instead of Indiana Street to avoid conflict regarding public health and contaminants from Rocky Flats; the west side of Rocky Flats is less contaminated than the east side.

### ***Group Discussion***

- The Department of Energy retained the area in the middle of Rocky Flats, and all of the land outside the central operating unit was not cleaned up. Within the central operating unit, a lot of contaminated soil was dug up, boxed up, and moved.
- Moving the Jefferson Parkway to the east of Indiana Street would not alleviate the concerns related to contamination.

### **Recommendation #4**

- JPPHA should provide clarity for the public on how the Jefferson Parkway helps achieve current Front Range transportation objectives and why the JPPHA chose the Indiana Street alignment over other alternative alignments (e.g., Highway 93).
- Providing this information to the public would increase transparency around the project and build goodwill with the community.

### ***Group Discussion***

- CDOT conducted an environmental Impact statement (EIS) process between 2003 and 2008 and the draft EIS identified what is now the Jefferson Parkway alignment as the preferred alignment CDOT considered 73 alternatives and went through a five-year analysis before agreeing to the current alternative. CDOT did consider contamination issues in their process.
- During the decision-making process that determined the current alignment, CDOT did not choose many alternative alignments for various reasons. It may be possible to better describe the considerations that informed the conclusions and how the conclusions meet the Front Range objectives.

### **Recommendation #5**

- JPPHA should find an alternative alignment for the Jefferson Parkway that goes along Highway 93.
- The proposed Parkway would increase traffic along Indiana Street because it is strictly a toll road. Not many locals will want to get onto a tollway.

### **Recommendation #6**

- JPPHA should sponsor an independent review of all the past studies of both soil contamination and public health impact by a qualified national institution that is independent of the Department of Energy (e.g., the National Academy of Sciences). The

independent reviewer should assess risks and conclusions surrounding public health impact, and review sampling techniques.

- The soil contamination studies have caused conflict because they all used different sampling techniques, so an independent review may be informative. There have been five epidemiological studies, and all but one (CDPHE's study) indicate that there is an increased cancer occurrence surrounding Rocky Flats.

#### **Recommendation #7**

- JPPHA should require dust control and mitigation during the construction of the Jefferson Parkway to deal with high winds.
- Additionally, air pollution control measures and strategies are required under Colorado's State Implementation Plan for the Denver Metro/North Front Range non-attainment area under the Clean Air Act. Dust control measures should be taken along the entire length of the Jefferson Parkway.

#### **Recommendation #8**

- JPPHA should mitigate noise associated with the project.
- Other JPAC members will propose an additional recommendation about noise mitigation.

#### **Recommendation #9**

- JPPHA should carefully consider the site and design of the Greenway Trail.
- JPPHA should consult with the Colorado Department of Transportation (CDOT) about options for wildlife crossings. JPPHA could consider examples of successful wildlife crossings in Salida and Kremmling.

#### **Recommendation #10**

- JPPHA should seek to open the records of the Special Grand Jury 89-2.
- The records of the Grand Jury may contain previously undisclosed information about the Rocky Flats contamination. The local governments that make up the JPPHA Board may be able to invoke some of their privileges to access this information.

#### ***Group Discussion***

- The Federal Grand Jury requested that the records be released, and the Federal District Court of Colorado had a hearing and denied the request. It does make a difference who requests access. Grand Jury proceedings are confidential; the only people who attend are the prosecution, the witnesses, and the grand jurors.

#### **Recommendation #11**

- JPPHA should require the incorporation of design features into the Jefferson Parkway that help to achieve objectives from Arvada's community plans, including the Arvada Arts and Culture Master Plan, the Arvada's Bicycle Master Plan, and the Parks Plan. These objectives include expanding the arts and culture throughout Arvada and improving bicycle and pedestrian access (i.e., reducing barriers to access). Putting bike paths along the Parkway would maximize multi-modal travel opportunities.
- Including these features in the design will 1) reduce the need to retrofit Jefferson Parkway to meet other City objectives, 2) help to achieve the City of Arvada's objectives, and 3) help to build good will in the community toward the Parkway.

#### ***Group Discussion***

- There is a lack of north-to-south bike paths in the area.
- The trail should connect to neighborhoods and parks, which is an objective in the Arvada Bicycle Master Plan.

#### **NEXT STEPS**

- At the next meeting, which is on August 16, members of the JPAC will continue to present recommendations. Marc, Jerry, and Brent all indicated that they will present ideas.
- JPAC members should consider making a recommendation regarding the future of the JPAC committee. If no one plans to present an idea on this topic, Peak will add a specific agenda item to discuss the future of the JPAC committee.

**Jefferson Parkway Advisory Committee (JPAC)**  
**August 16, 2018**  
**Meeting Summary – FINAL**  
**Apex Field House**

**ATTENDANCE**

*Participants:* Bini Abbott, Bill Branyan, Rebecca Kallio, Vera Ladkow, Britta Nelson, Ian Owens, Bill Ray, Brent Smith, Jill Strauss, Gerry Taylor, Brett Vernon

*Facilitation:* Heather Bergman, Sam Haas

**ACTION ITEMS**

<b>Bill Ray</b>	<ul style="list-style-type: none"><li>• Send JPAC members the request for qualifications after it has been finalized.</li><li>• Provide the final report of West Connect to JPAC members.</li></ul>
<b>Peak Facilitation Group</b>	<ul style="list-style-type: none"><li>• Create a document with all the recommendations grouped into themes and send the recommendation sheet to all JPAC members with the agenda a week before the next meeting.</li><li>• Coordinate with Bill Branyan to ensure he has an opportunity to provide thoughts on his level of approval for each recommendation.</li></ul>

**UPDATE ON JEFFERSON PARKWAY PUBLIC HIGHWAY AUTHORITY (JPPHA) BOARD MEETING**

Bill Ray provided a brief update on the August JPPHA meeting

- The JPPHA Board was presented with the 2017 audit, and it was clean. The Board extended the contract of the financial advisory firm of Ernst and Young. Finally, the Board moved to authorize the request for qualifications (RFQ) for a private partner to construct and maintain the Jefferson Parkway. The RFQ will be released after Labor Day and responses will be due after Thanksgiving. Bill Ray will send JPAC members the final request for qualifications (RFQ).
- The qualification process will require proposers to put together a statement about the team that they plan to use. There will be three finalists at most. If there are enough qualified teams, the next step would be the release of a RFP.
- The investors of the Northwest Parkway submitted an unsolicited proposal. The JPPHA Board has declined this proposal, but has encouraged the investors to submit an RFQ response. The investors have the exclusive right to complete the Northwest Parkway extension, which is not related to the Jefferson Parkway.
- The Board would like to drive the RFQ process forward because they believe there is a small window of opportunity (the rates are low, construction costs are low (yet rising), and market interest is high).

**Clarifying Questions**

JPAC members asked clarifying questions regarding the JPPHA Board meeting. Questions are indicated in italics.

*Who are the Jefferson Parkway staff?*

There are technically no Jefferson Parkway staff; the JPPHA Board decided at the inception of the Authority that they would not have any personnel. However, they have employed general counsel, several project engineers (PB America, Isolux, then HDR Consulting), a strategic advisor (Don Hunt), and now a transactional attorney (Ashurst). Bill Ray is on the payroll for the City of Arvada part time and is on permanent assignment to the JPPHA.

*Are there any updates regarding the Federal Aviation Administration (FAA)?*

Not at the moment.

## **JPAC MEMBER RECOMMENDATIONS TO THE JPPHA BOARD**

JPAC members discussed and suggested potential recommendations to be presented to the JPPHA Board.

### **Recommendation #1: Adopt the following mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Statement (EIS).**

#### Construction Mitigation Measures (EIS Ch. 4-27)

- **Public Awareness:** Implement and maintain a construction hotline to inform the public and receive complaints regarding construction activities. Information could be sent to affected members of the public before construction, using advertising/public relations. Work activities could be coordinated to ensure they do not coincide with sporting, school or special events.
- **Noise:** Methods include the use of temporary noise walls/screens, noise blankets on equipment, and quiet generators. Scheduling construction during less noise-sensitive times and combining noisy operations to occur during the same period may also be beneficial.
- **Vibration:** Perform vibration studies for sensitive structures within 50 feet of the roadway or construction activities.
- **Access:** Use enhanced signing and alternate access, and do not close multiple interchanges concurrently.
- **Traffic:** Limit detours and construction traffic, utilizing major arterials where possible. Schedule construction during periods of least traffic. Use intelligent management systems and variable message signs to advise/redirect traffic. Enforce speed restrictions and provide adequate space for enforcement. Use a Courtesy Patrol and enhanced signing. Work with Regional Transportation District to offer enhanced operations during peak construction. Develop traffic management plans to maintain access to local businesses/residences and coordinate with emergency service providers to minimize delay and ensure access to properties.
- **Modified Pedestrian/Bike Mobility:** Provide well-defined detours with adequate signing, fencing, and lighting for pedestrians/bicyclists. Comply with American Disability Act requirements. Construct a new bike/pedestrian overpass as a detour before the old one is demolished.

- Environmental: Use wetting/chemical inhibitors for dust control. Provide early investigation of subsurface conditions and prepare a well-defined materials handling plan. Require prompt and safe disposal of waste products. Prepare a well-defined stormwater management plan and implement water quality best management practices early in the project. Minimize off-site tracking of mud and debris by washing construction equipment in contained areas and via temporary access stabilization. Control and prevent concrete washout and construction wastewater. Recycle materials and use recycled materials as possible.

#### Hazardous Materials Mitigation Measures (EIS Ch. 4-27)

- Discussions will be conducted with CDPHE to define activities necessary to protect public health and the environment from potential soil contamination near the Rocky Flats Wildlife Refuge resulting from construction activities. NOTE: The EIS contains maps identifying Sites of Concern and Sites with Recognized Environmental Conditions Central Portion (Figure 4.15-2), Plutonium IsoContours in the Northwest Corridor Study Area (Figure 4.15-3), and Americium IsoContours in the Northwest Corridor Study Area (Figure 4.15-4).
- A materials management plan and health and safety plan may be necessary for the proposed actions in the Rocky Flats Environmental Technology Site (RFETS) area where actinides are present in soil and possibly surface water. Site-specific health and safety plans would also be necessary for landfill and mine sites where methane gas is a potential concern. (4.27-5)
- Modified Pedestrian/Bike Mobility: Provide well-defined detours with adequate signing, fencing, and lighting for pedestrians/bicyclists.
- Comply with American Disability Act requirements.
- Construct a new bike/pedestrian overpass as a detour before the old one is demolished.
- Environmental: Use wetting/chemical inhibitors for dust control.
- Provide early investigation of subsurface conditions and prepare a well-defined materials handling plan.
- Require prompt and safe disposal of waste products.
- Prepare a well-defined stormwater management plan and implement water quality best management practices early in the project.
- Minimize off-site tracking of mud and debris by washing construction equipment in contained areas and via temporary access stabilization.
- Control and prevent concrete washout and construction wastewater.
- Recycle materials and use recycled materials as possible. (p. 4-27.6 and 7).

#### Hazardous Materials Impacts Analysis (EIS at 4.15-30 through 32)

- The materials handling plan should describe any required permitting, waste profiling, and manifesting for off-site disposal of contaminated soil.
- Sites with existing remedial measures such as environmental media monitoring stations (i.e., sediment, surface water, groundwater, and air) and engineered controls (i.e., capped waste facilities) may require coordination with applicable regulatory agencies to avoid, minimize, or mitigate impacts from the project.

- RFETS A site-specific risk assessment may be needed to document that the project would not pose an unacceptable risk to human health and the environment during and after construction.
- In addition, a site-specific materials management plan and health and safety plan may be required for construction in the RFETS area where impacted surface water and sediment may be present in Woman Creek and Walnut Creek crossings and where soils contain low concentrations of actinides. Such plans typically include a description of engineering controls needed to prevent contaminant mobilization and cross contamination within and outside the alternative footprint during construction, personal protective equipment and protocols needed for worker health and safety, and monitoring requirements needed to demonstrate that activities are protective of human health and the environment.

**Rationale:** The EIS, the environmental review document for the transportation study, recommends adopting the mitigation measures because of “radionuclide contamination of surface soils within the Industrial Area, Buffer Zone, and properties to the east of Indiana Street,” with Plutonium-239/240 and americium 241 identified as the primary contaminants in surface soil in the vicinity of the Northwest Corridor study area (EIS Hazardous Materials 4.15-6). These measures should be adopted to address impacts identified by the EIS and because no other analysis indicates these measures are no longer needed. The EIS's Hazardous Materials Impacts Analysis provides further detail for the associated mitigation measures. The mitigation requirements for the Parkway should specify these details.

Link to 2008 Northwest Corridor Transportation Study Environmental Impact Statement: <https://www.codot.gov/library/studies/northwest-corridor-eis>

### ***Group Discussion***

The JPAC discussed recommendation #1.

- Some JPAC members suggested that trucks should be required to turn off their reverse beepers, or the trucks that have reverse beepers should only operate during specific times of the day. Other members raised the concern that the use of reverse beepers on construction vehicles is mandated by law and should not be turned off.
- Notification and communication with neighborhoods will be critical.
- The JPPHA Board should consider installing sound buffer corridors (1,000 feet from houses).
- It is difficult to strike a balance between keeping roads open during busy travelling times while also attempting to reduce noise during less busy travelling times. It may be necessary to prioritize one over the other.
- The EIS language includes a lot of “mays,” and the JPAC could consider replacing this language with more firm words such as “shall” or “will.”
- The JPAC had questions about what would happen if the initial site survey of the right of way along Indiana Street does not show contamination. The recommendation could include built-in thresholds for the amount of allowable contamination or how far east the mitigation measures are pursued. Since the

Colorado Department of Public Health and the Environment (CDPHE) is the regulatory agency, the JPAC should not recommend thresholds that are stricter than CDPHE's.

**Recommendation #2: The public (residents, city, county, etc.) should not financially responsible for the Jefferson Parkway. The RFP should require the private investment firm to cover the shortfall if the revenue does not cover operations costs.**

***Group Discussion***

The JPAC discussed recommendation #2.

- The RFP process will provide resolution to most of the questions implied in this recommendation. The traffic and revenue study provided clarity about this topic, and the JPPHA Board believes that the Parkway can be built with a 100% risk transfer to the private sector. However, that is not a guarantee. Jurisdictions will have the ultimate decision-making power. JPPHA cannot collect taxes; JPPHA can only collect fees. Member entities do not have an established cost-share agreement. However, if the proposal requires some public participation, member entities will have to discuss that. Bill Ray's salary from Arvada is an advance. Every member entity pays an equal amount to pay the other consultants as a cash advance.
- The Northwest Parkway is not governed by any language guaranteeing that the public will not be financially responsible for it but it was built as a traditional public finance project, so the situation is different. The Northwest Parkway's financial model unraveled as a result of the recession and its creators decided to privatize the operations. Brisa (the private investor) assumed the liability for operating the Northwest Parkway and any operational shortfall is their responsibility.
- The money collected from the Jefferson Parkway's tolls will reimburse the advances that the member entities contributed. The revenue will also be used to maintain the Parkway.

**Recommendation #3: Light and sound mitigation measures should be considered very carefully, especially for areas close to homes. Additionally, sound mitigation measures other than walls should be considered to account for the views from those homes where possible. One option could be to recess the roadway as it goes through Leyden Rock and provides a pedestrian crossover close to grade. A recess would help with sound and make the neighborhood feel less divided.**

**Recommendation #4: Bike/Walk pathways should be included in the design to allow pedestrian use across the parkway and eventually link up to trails at the north and south ends.**

***Group Discussion***

JPAC members discussed recommendation #4.

- JPAC members had questions about why the recommendation only specifies north and south ends. There should be crossings at all trail connections.

**Recommendation #5: The RFP should state that all NEPA-like standards be followed for the environmental review process even though no federal funds are used.**

**Recommendation #6: If the current parkway alignment up Indiana Street remains the same, the JPPHA Board should install adequate air monitoring equipment downwind of the construction to monitor for airborne contamination caused by construction activity. Monitoring should be accompanied by a public comment period on the design of the air monitoring equipment and on the consequences of exceedances of specified airborne contamination thresholds (and what those thresholds should be).**

### ***Group Discussion***

JPAC members discussed recommendation #6.

- Both the equipment and the sampling locations should be monitored.
- The thresholds are not yet clear. The public or health experts could define thresholds.
- The “public comment period” should be a clearly defined process during a set timeframe.
- Qualified experts should provide input on the equipment, and the public should also have the opportunity to comment. The equipment used will be designed by scientists to fit the specific area.
- The Occupational Safety and Health Administration (OSHA) has standards and requirements for the types of equipment that can be used on certain types of sampling units.
- Sampling should not stop when construction begins; both soil and air sampling should continue throughout construction.

**Recommendation #7: The committee should continue meeting during the RFP process and construction of the Jefferson Parkway.**

- JPAC members discussed recommending that the JPAC not actively meet during construction, but that the JPPHA Board consult with the JPAC about communication with communities (e.g., “how much notice should be provided for road closures?”). JPAC members could gather information from neighbors about communication preferences.
- Community members should have direct access to an entity that can answer questions and respond to concerns during construction.

**Recommendation #8: Mitigation measures should be taken to insulate the neighborhood of Leyden Rock from the negative impacts of the Jefferson Parkway construction, prevent the highway from dividing the community, and keep the residents safe.**

- The 2018 community development budget for the City of Arvada is over \$1 million. The City has several grants that are aimed to create a sense of community. The 2018 Arvada budget describes the City as a beautiful suburb with a rich history, a robust mix of businesses, and a high quality of life. Leyden Rock embraces this commitment

to community and is a strong, integrated, vibrant neighborhood. The Leyden Rock Social Committee hosted 15 events in 2017, drawing over 250 attendees. The community is centered around a clubhouse and a main park, which will be split by the construction of the Jefferson Parkway. The Parkway will physically divide the community into two. Most people walk through the community, so the Parkway will impact communication between neighbors.

- There is no community along the beltway that is bisected by the highway like Leyden Rock will be. Anthem is the only community that is right next to the highway. Using a rangefinder, a JPAC member determined the distance from houses in Anthem to the highway. On the east end of Anthem, some homes are 205 yards away from the shoulder of the highway. By the tollbooth, some homes are 185 yards away. On the other end of Anthem, some homes are 113 yards from the shoulder of the highway. Using a map of the proposed Jefferson Parkway construction through Leyden Rock, the JPAC member went to the area where the cut is graded to its final estimate. The JPAC member stood in the middle of the proposed travel lane and determined the distance to the houses. The first reading indicated that there are houses 65 yards from the travel lane; further east one house was 58 yards; other readings along Leyden Rock showed that there were homes 69 yards and 65 yards from the travel lane. There would be approximately 19 yards from the edge of the parkway to the berm. Berms are roughly 20 yards high and are typically 12 yards from the backyard fences. If a car is going 65 miles per hour, it covers 100 yards in three seconds. Residents are concerned that if there are accidents, the cars will end up in their backyard.

**Recommendation #9: There should not be any sound walls to mitigate noise near Leyden Rock.**

**Recommendation #10: There should be wide, clear pedestrian walkways that connect one end of the Leyden Rock community to the other.**

- The best examples of similar pathways are on Highway 93, on 19<sup>th</sup> street in Golden, or the new I-70 pathway.
- There should be at least two pathways.

**Recommendation #11: The design should integrate forested areas in empty spaces between pathways to improve safety, provide sound mitigation, create green space, and increase neighborhood connectivity.**

#### ***Group Discussion***

- The JPAC member proposing this recommendation emphasized that they believed in a win-win solution, as JPPHA has invested a lot into the project and has secured the right of way. Leyden Rock would not exist without JPPHA, but it is important to mitigate the impacts effectively (to the maximum extent possible) and make it as safe as possible.

- The three most important components are light, sound, and safety. It is important to pursue the most comprehensive mitigation for all three of these components, which will mean balancing and prioritizing them.
- There are 1,700 homes in Leyden Rock (there are projected to be 2,200 total).
- Leyden Rock could potentially have a community fundraiser to support the mitigation measures.

**Recommendation #12: Reach out to Leyden Rock Metro District and/or Candelas Metro District to determine if and how they could contribute.**

**Recommendation #13: Add an access road onto the highway from 82<sup>nd</sup> Street to the Jefferson Parkway to facilitate Leyden Rock access to the Jefferson Parkway and provide additional egress options.**

- Leyden Rock does not have any connecting roads to the north. Adding an access road will reduce traffic on Indiana Street and decrease the objections to the Parkway from community members.
- Ideally, the access road should connect to Candelas Parkway Highway 72.

**Recommendation #14: There should be multimodal options along the access road. The pathway should connect to all the trailheads (the Greenway Trail, etc.). Development of the multimodal options should be included in phase 1 of construction.**

**Recommendation #15: Consider innovative approaches to pursuing the recommendations.**

**Recommendation #16: JPPHA Board should take steps to promote the utilization of the Parkway. They should minimize or eliminate tolls (or offer other funding mechanisms), and they should solicit state or federal funding for the project.**

- There should be the option for one or two-stop subscriptions for people who will only use on a portion of the Parkway.

**Recommendation #17: The FAA has objected to the alignment of the Parkway at its Northern end, as it is close to the Jefferson County Airport. The FAA has proposed that the Parkway be lowered 20 feet in this area and that that tunnels be constructed, as the FAA believes this would protect users of the Parkway in the event that an aircraft crashes onto the parkway. To alleviate the FAA concerns as well as the cost, change the alignment of the Parkway to “joint use” of the current right-of-way of CO Highway 128 from its intersection with the end of the Northwest Parkway extension. From this point to where the Parkway turns south at Indiana Street, the CO 128 right-of-way could be a shared road which could be tolled or not tolled.**

- When the Northwest Parkway was being developed (starting at 96<sup>th</sup> Street through Interlocken) the developers thought it may be possible to have an urbanized, un-tolled section of the road, but the toll companies did not approve. Continuity of tolling is important.

- JPAC members discussed the possibility of putting the tollway through the middle of the Highway. There was a study done for the Northwest Parkway extension about putting continuous toll lanes down the middle of the road and providing accessibility to existing intersections. The cost of constructing the frontage roads and developing interchanges at each location was \$150 million six years ago.

**Recommendation #18: Utilize Indiana Street as the northbound lanes of the Parkway and construct the new southbound lanes in the Rocky Flats right-of-way (from west 96<sup>th</sup> Avenue north to Highway 128). A Parkway entrance/exit could be provided at 96<sup>th</sup> Avenue onto Indiana Street.**

- Pursuing this recommendation would mean that, from west 96<sup>th</sup> Avenue, Indiana Street would continue to be a public road, to the north Indiana Street would be part of the Parkway.
- The benefit of this option would be to reduce the overall Parkway construction cost and create additional revenue for the Parkway.
- There were questions about whether it would be possible to remove an existing public road for the development of a tollway. It was stated that the City has committed to keeping Indiana Street as it is. Currently, part of Indiana Street is a City street, and part of it is a County road.

**Recommendation #19: Offer a subscription for bike access to the new bike route.**

**NEXT STEPS**

- At the next meeting, the JPAC will start discussing what they would like to submit to the JPPHA Board. The JPAC protocols specify that “on a case-by-case basis, JPAC members will decide how their agreements, or lack thereof, will be described to the JPPHA Board of Directors. Possible choices for those descriptions are unanimity, consensus (from a consensus-building process), or a report of the different perspectives of JPAC members.
- Bill Ray will send out the final West Connect report to JPAC members.
- Peak Facilitation Group will create a document with all the recommendations grouped into themes (e.g., noise, Rocky Flats, community continuity, etc.). At the beginning of the meeting, JPAC members will be given red, yellow, and orange dots, and will place a dot on each recommendation (written on large sheets of paper) to indicate their level of approval. Any recommendations with mixed dot colors will be discussed further.
- Peak Facilitation will send the recommendation sheet to all JPAC members with the agenda a week before the next meeting.
- There will likely be an October meeting to finish the discussion and make decisions regarding recommended proposals.
- Bill Branyan will not be at the September meeting. Peak Facilitation will coordinate with him to ensure he has an opportunity to provide thoughts on his level of approval for each recommendation.

**Jefferson Parkway Advisory Committee (JPAC)**  
**September 20, 2018**  
**Apex Field House**  
**Meeting Summary – FINAL**

**ATTENDANCE**

*Participants:* Bini Abbott, Rebecca Kallio, Vera Ladtkow, Britta Nelson, Ian Owens, Bill Ray, Brent Smith, Jill-Ellyn Straus, Jerry Taylor, Brett Vernon

*Facilitation:* Heather Bergman and Sam Haas

**ACTION ITEMS**

<b>Peak Facilitation Group</b>	<ul style="list-style-type: none"><li>• Send the link to the request for qualifications.</li><li>• Send Judge Brimmer’s decision.</li><li>• Send a Doodle for the October meeting.</li></ul>
<b>Anyone who wrote a recommendation</b>	Consider whether they want to leave their recommendation as-is, rewrite it, or withdraw it.

**UPDATE ON THE JEFFERSON PARKWAY PUBLIC HIGHWAY AUTHORITY (JPPHA) BOARD MEETING**

Bill Ray provided an update on the JPPHA Board meeting.

- The request for proposals (RFQ) to design, build, finance, operate, and maintain the Jefferson Parkway project was released to the public on September 7. That document is available on the website in the “procurement” tab. September 18 was the deadline for the contractors planning to submit a proposal to identify a single point of contact. The JPPHA Board has received a number of submissions.
- If JPPHA received enough qualified respondents to the RFQ, the Board would shortlist no more than three respondents. That selection process will take place between December 6, 2018 (when responses are due) and December 20, 2018. Then a request for proposals (RFP) will be released. Each respondent may spend \$5 million developing their response. It will take approximately eight months for the JPPHA to evaluate those submissions. If there is a clear winner, JPPHA will negotiate a concession agreement that will close approximately a year from today and will reach financial close by the end of 2019.
- Working with the Federal Aviation Administration (FAA) has been challenging, so the JPPHA Board has suggested that a different alternative that serves the purpose should be explored. Bill Ray has approached the Colorado Department of Transportation (CDOT) and discussed shifting the north end of the Parkway from where it was going to be (across from Interlocken) half a mile to the west. CDOT has agreed to this realignment. JPPHA will modify their access permits to allow for this change. It would be possible to add lanes onto State Highway 128 to accommodate traffic, and CDOT has agreed with that approach.

## Clarifying Questions

Participants asked clarifying questions about the update on the JPPHA Board meeting. Questions are indicated in italics, followed by the response.

*Is the current Simms Street going to be closed?*

Simms Street will be relocated, and the current location of Simms Street will become a cul-de-sac to serve the airport.

*Is Broomfield still going to build an extension through Interlocken to Highway 128?*

That is the decision of the Northwest Parkway and the concessionaire. There was a conceptual design for an extension six years ago, and it was going to cost \$150 million to extend the road by two miles.

## DOTTING PRIORITIZATION EXERCISE

JPAC members used colored dots to prioritize their recommendations. The dotting exercise is intended to provide data and help the JPAC decide how to proceed with their discussions; the dots do not indicate a decision. JPAC members were provided red, yellow, and green dots and placed one colored dot on each recommendation to indicate their level of support. Green dots signified full support, yellow dots signified questions or concerns, and red dots signified no support. Bill Ray offered to provide recommendation-specific feedback, and the group agreed to listen to Bill's input after they completed the dotting exercise.

Recommendation	Number of Green Dots	Number of Yellow Dots	Number of Red Dots
#1: Adopt the mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Analysis.	11	0	0
#2: State in the RFP that all NEPA-like standards be followed for the environmental review process.	8	3	
#3: Install air monitoring equipment down-wind of construction to monitor airborne contamination. Accompany this with a public comment period.	7	4	0
#4: Require independent testing for plutonium and other contaminants before surface-disturbing activities on Indiana Corridor and require public posting of results. If contaminant levels exceed CDPHE's standards, pause construction and follow mitigation measures, then resample.	7	2	2
#5: Sponsor independent review of all past studies of soil contamination and public health impacts.	3	2	6
#6: Require dust control and mitigation during construction and follow the Clean Air Act air pollution	11	0	0

control measures required under Colorado's State Implementation Plan.			
#7: JPPHA should seek to open the records of the Special Grand Jury 89-2.	2	0	9
#8: Include bike/walk paths in the design to allow pedestrian use across the Parkway, and eventually like these paths to other trails.	8	3	0
#9: Create multi-modal options along proposed access road by Leyden Rock during phase one of construction that connects to all trailheads.	7	4	0
#10: Offer a subscription for bike access to the new bike route.	1	3	7
#11: Carefully consider the site and design of the Greenway Trail.	9	2	0
#12: Take mitigation measures to insulate Leyden Rock from negative impacts of construction and prevent the highway from dividing the community and keep residents safe.	9	1	0
#13: Do not build sound walls near Leyden Rock.	3	7	0
#14: Build wide, clear pedestrian walkways that connect one end of Leyden Rock to the other.	9	2	0
#15: Integrate forested areas in empty spaces into the design to improve safety, create green space, and increase community connectivity.	7	3	0
#16: Reach out to Leyden Rock Metro District and/or Candelas Metro District to determine if/how they could contribute.	5	5	0
#17: Include an access road onto the Parkway from Highway 72 to facilitate Leyden Rock access and provide additional egress options.	4	6	1
#18: Require incorporation of design features that help achieve objectives from Arvada's community plans.	7	2	1
#19: Carefully consider light/sound mitigation measures, especially close to homes. Sound mitigation options other than walls should be considered to account for views.	9	2	0
#20: Take steps to promote utilization of the Parkway (minimize/eliminate tolls or offer other funding mechanism and solicit state/federal funding.	1	6	3
#21: Utilize Indiana Street as the northbound lanes of the Parkway and construct the new Southbound lanes in the Rocky Flats right-of-way (from west 96 <sup>th</sup> Ave north to 128).	1	3	6
#22: Change the alignment to go up Highway 93 instead of Indiana Street to avoid concerns about Rocky Flats.	2	0	8

#23: Provide clarity for the public on how the Parkway helps achieve current Front Range transportation objectives and why JPPHA chose Indiana Street alignment.	6	1	4
#24: Consult with Colorado Parks and Wildlife about options for wildlife crossings.	9	2	0
#25: Change the Parkway alignment to “joint use” of current highway 128 from its intersection with Northwest Parkway to where the Parkway turns south at Indiana Street (to mitigate Federal Aviation Administration).	3	5	3
#27: JPAC should continue to meet during the RFP process and the construction of the Parkway.	9	2	0
#28: Consider innovative approaches to pursuing all recommendations.	9	2	0
#29: Send all presentation materials from JPAC’s May meeting to the JPPHA Board to consider and review.	7	1	3

### GROUP DISCUSSION

The group focused their discussion on the recommendations that received either all green dots or had only a few yellow dots. Participants who were unsure or had questions about the recommendation shared their thoughts, and Bill Ray provided his input on these recommendations.

**Recommendation #1:** Adopt the mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Statement (EIS).

- Bill stated that this recommendation is a recitation of standard CDOT policies and expressed support for moving forward with the recommendation.

**Recommendation #2:** The RFP should state that all NEPA-like standards be followed for the environmental review process even though no federal funds are used.

- Group members who used yellow dots shared that their hesitation with this recommendation is associated with the federal NEPA process. They indicated that any specific NEPA-like standards that the group wants to call out could be included in the RFP but embarking on a NEPA-like process without specific goals that differ from other required environmental analyses could create unintended procedural bureaucracy without adding an additional layer of value.
- Bill clarified that the original reason the JPPHA Board decided not to pursue federal funds is that there were no funds to be allocated. The decision was not an attempt to avoid federal standards or regulations.
- Bill stated that there will be no further environmental review processes because they have all been completed. JPPHA is in the construction drawing and building phase. There will be some site-specific reviews for the 404 permit, which is required when crossing a wetland.

**Recommendation #3:** If the current parkway alignment up Indiana Street remains the same, the JPPHA Board should install adequate air monitoring equipment downwind of the construction to monitor for airborne contamination caused by construction activity. Monitoring should be accompanied by a public comment period on the design of the air monitoring equipment and on the consequences of exceedances of specified airborne contamination thresholds (and what those thresholds should be).

- Group members who used yellow dots shared that any air monitoring must be done pre-construction to establish a baseline because there are homes nearby. nearby homes. Some expressed concern that air is difficult to monitor because it is constantly moving. The RFQ also states that permits will be acquired to conduct air monitoring.
- Bill's thoughts on recommendation #3 also related to recommendations #4, #5, and #6. JPPHA will willingly submit to any permitting requirements of any jurisdiction. There are local requirements specific to Broomfield, Arvada, etc., that overlay state requirements. For each of these questions, Bill would like to know the clear purpose of conducting the additional analyses.

**Recommendation #5:** JPPHA should sponsor an independent review of all the past studies of both soil contamination and public health impact by a qualified national institution that is independent of the Department of Energy (e.g., the National Academy of Sciences). The independent reviewer should assess risks and conclusions surrounding public health impact, and review sampling techniques.

- Bill's question about the purpose of additional review also applied to this recommendation. In response, some participants indicated that the added value was in the independent reviewer.
- Some people who did not indicate support for recommendation #5 shared that recommendation #5 would not be necessary if recommendation #4 were pursued. These participants indicated support for recommendation #4 because the two perspectives on the issue of plutonium are so far apart and an independent review could settle some questions. However, there has historically been some challenges when determining what "objective" or "independent" really means. Also, depending on who hires and pays the independent reviewer, members of the public or the JPPHA Board may view the reviewer's independence as compromised.
- There are also questions about implementation thresholds (e.g., is the reviewer going to study groundwater or surface water; are they going to study to a two-inch or two-foot depth, etc.). People have differing degrees of comfort with risk and differing perceptions of risk.
- The JPAC asked to revisit recommendation #4 and #5 after members review the decision by Judge Brimmer.

**Recommendation #8:** Bike/walk pathways should be included in the design to allow pedestrian use across the parkway and eventually link up to trails at the north and south ends.

- Some participants were unconvinced that the private partner would agree to implement this recommendation.

- Bill supported advancing this recommendation to the JPPHA Board.

**Recommendation #9:** There should be multimodal options along the proposed access road by the Leyden Rock community. The pathway should connect to all the trailheads (the Greenway Trail, etc.). Development of the multimodal options should be included in phase 1 of construction.

- Bill's questions about this recommendation were about timing; it may not be able to be implemented during phase 1 of construction. Bill has discussed closely-related concepts with the landscape designer for Arvada.

**Recommendation #11:** JPPHA should carefully consider the site and design of the Greenway Trail.

- The Jefferson Parkway has nothing to do with the Greenway Trail. The Greenway will propose their design, and the JPPHA Board will review it.
- A federal grant is being used to pay for the Greenway Trail.

**Recommendation #12:** Mitigation measures should be taken to insulate the neighborhood of Leyden Rock from the negative impacts of the Jefferson Parkway construction, prevent the highway from dividing the community, and keep the residents safe.

- Bill's question about the purpose of the mitigation measures also applied to this recommendation. Many people would likely have differing opinions about how much mitigation would be enough. It will be important to come to a common understanding with Leyden Rock residents about expectations for the mitigation measures.
- The RFP could potentially provide bonus points to bidders who show the most creative, innovative ideas for mitigating the impact to Leyden Rock.

**Recommendation #13:** There should not be any sound walls to mitigate noise near Leyden Rock.

- Participants who used yellow dots expressed hesitation about the speed with which trees and other vegetation grows, and therefore its effectiveness as a barrier.
- Those who were uncertain were also uncomfortable with the uncompromising nature of the statement "no sound walls," as there could be some cases where a sound wall is desirable.

**Recommendation #14:** There should be wide, clear pedestrian walkways that connect one end of the Leyden Rock community to the other.

- The pedestrian walkway would go across the Parkway connecting the two sides of the Leyden Rock community.
- This recommendation relates to recommendation #15 and #16 in terms of the potential partnerships.
- CDOT conducted a study about the impact of construction on the floodplain, and this should be considered when building the pathways.

**Recommendation #16:** Reach out to Leyden Rock Metro District and/or Candelas Metro District to determine if and how they could contribute.

- The purpose of this recommendation would be to expand options and provide an opportunity for the communities to be part of the solution.

**Recommendation #17:** The design should include an access road onto the highway from Highway 72 to the Jefferson Parkway to facilitate Leyden Rock access to the Parkway and provide additional egress options.

- The suggestion is for there to be a slatted road that would allow community members to access one of the roads onto the Parkway. This would pull traffic off Indiana Street.
- Bill responded that this would be a multi-million-dollar change in design.

**Recommendation #18:** JPPHA should require the incorporation of design features into the Jefferson Parkway that help to achieve objectives from Arvada’s community plans, including the Arvada Arts and Culture Master Plan, the Arvada’s Bicycle Master Plan, and the Parks Plan. These objectives include expanding the arts and culture throughout Arvada and improving bicycle and pedestrian access (i.e., reducing barriers to access).

- Some participants had questions about how much the community plans influence specific actions. Bill shared that master plans translate to strategic results. If a community plan says there should be “safer spaces,” practical actions emerge from that direction.
- Participants were also interested in including the community plans from the other involved jurisdictions (not just Arvada). They recommended changing the recommendation to “all applicable master plans.”

**Recommendation #23:** JPPHA should provide clarity for the public on how the Jefferson Parkway helps achieve current Front Range transportation objectives and why the JPPHA chose the Indiana Street alignment over other alternative alignments (e.g., Highway 93).

- A one-page description of how JPPHA came to the alignment decision would be helpful for many community members. Bill agreed that this was a great idea.

**Recommendation #26:** The public (residents, city, county, etc.) should not be financially responsible for the Jefferson Parkway. The RFP should require the private investment firm to cover the shortfall if the revenue does not cover operations costs.

- There were questions about who would be financially responsible if the concessionaire goes “belly-up.” Bill clarified that the debt would be resold to a different company.
- The JPPHA Board is hoping to receive a proposal that does not seek a subsidy for the initial year of operations.

**Recommendation #27:** The JPAC should continue meeting during the RFP process and construction of the Jefferson Parkway.

- Some people had questions about the purpose of continuing to meet. Others emphasized that there will be ongoing changes and that it will be important for the

community to have an opportunity to interface with the Board. The group should be able to consult on the RFP responses and design proposals.

**Recommendation #29:** JPAC should send the following material from the May JPAC meeting to the JPPHA Board to consider and should specify what they would like the JPPHA Board to do with this information:

- Randy Stafford's position paper
- Jon Lipsky's presentation (PowerPoint and the meeting summary)
- The videotape recording and transcript of Kristen Iversen's talk; the presentation material from Colorado Department of Public Health and Environment
- Some participants did not think this recommendation was necessary because the meeting summary (which included the presentations and transcript)

#### **NEXT STEPS**

- Anyone who wrote a recommendation should consider whether they want to leave their recommendation as-is, rewrite it, or withdraw it.
- At the next meeting, there will be a shorter list of recommendations, and the group will go through each one. Those in support of the recommendation will share their reasoning, and those in opposition to the recommendation will share their reasoning. The report will list these reasons for support or opposition.

**Jefferson Parkway Advisory Committee (JPAC)**  
**October 23, 2018**  
**Apex Field House (5724 Oak Street)**  
**Meeting Summary – FINAL**

**ATTENDANCE**

*Participants:* Bini Abbott, Bill Branyan, Vera Ladtkow, Britta Nelson, Ian Owens, Bill Ray, Randy Stafford, Brett Vernon

*Facilitation:* Heather Bergman and Sam Haas

**UPDATE ON JEFFERSON PARKWAY PUBLIC HIGHWAY AUTHORITY (JPPHA) BOARD MEETING**

Bill Ray provided an update on the discussion and outcomes of the JPPHA Board meeting.

- On September 7, the JPPHA issued a request for qualifications (RFQ). As part of the RFQ process, the JPPHA Board agreed to host one-on-one sessions with any prospective teams that wanted to ask questions about the RFQ. The JPPHA Board had several of those conversations over a two-day period, and it is encouraging to see a high level of interest in the market. The questions and comments discussed with the teams will be consolidated into an addendum to the RFQ, which will be issued before October 31. Statements of qualification are due to the JPPHA by December 6. There will be a scoring process, and a final recommendation will be made to the JPPHA during the December 20 Board meeting. Up to three teams will be shortlisted and move forward to the request for proposal (RFP) process. The RFP will be issued in January 2019.
- The JPPHA Board met on Thursday, October 18 and discussed the initial budget for 2019. The JPPHA Board will take action on the budget document. The Board authorized the acquisition of a small parcel off of State Highway 72 called the Hotchkins parcel that will be needed for the development of the interchange.
- The next JPPHA Board meeting is on November 15, from 3:00 pm-5:00 pm at Arvada City Hall.

**GROUP DISCUSSION OF HOW TO PROCEED**

Given that five members of the JPAC were not in attendance, the present members expressed concern about ensuring that the group discussion accurately reflected the perspective of all members. The group discussed several options and agreed to the following next steps.

- The JPAC members in attendance would discuss the revised recommendations and reach agreement on next steps/language for as many recommendations as possible. Peak Facilitation Group will send an online survey with the revised language to JPAC members who were not in attendance to provide them with the opportunity to indicate whether they support the changes made.
- The JPAC will schedule a meeting before November 15 to discuss whichever recommendations they do not have time to discuss at this meeting and to determine a strategy for presenting information to the JPPHA Board.

- Peak Facilitation will expedite the meeting summary and send it to the JPAC members not in attendance with a link to the online survey so they can provide their input.

## **REVIEW AND DISCUSSION OF RECOMMENDATIONS**

Participants reviewed the revised list of recommendations, which are now organized by the number of green dots they received during the exercise at the last JPAC meeting (from most to fewest). The recommendations with the most green dots were discussed at the last meeting and had a high degree of support. For each recommendation, JPAC members who do not support it will share their reasoning. The purpose of this discussion is to provide a foundation for the content of the report that will be presented to the JPPHA Board. (A draft of the report will be sent to JPAC members for review before it is sent to the Board).

- The group first discussed how Peak Facilitation would frame the level of support/non-support for each of the recommendations in their report. The report will indicate where the group completely agreed on a recommendation (i.e., all members support the recommendation as written) and will denote recommendations that do not have full support by saying: “Most JPAC members support this recommendation and a few do not because they have X concerns or questions.”
- Unlike in a representative democracy, members of the JPAC do not represent any systematic group of people but rather are individuals who have diverse perspectives and backgrounds. Therefore, it would be inaccurate to assume that if 70% of the JPAC thought X, 70% of the general population would think the same. Also, presenting the binary results (e.g., 70% supported, 30% did not) does not capture the diversity of thought and nuanced opinions on each of the issues.

**Recommendation #1 (11 dots)** - Adopt the mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Statement (EIS).

The JPAC members present had no objections to this recommendation and agreed to support it as written.

**Recommendation #2 (11 Green Dots)** -JPPHA should require dust control and mitigation during the construction of the Jefferson Parkway to deal with high winds. Additionally, air pollution control measures and strategies are required under Colorado’s State Implementation Plan for the Denver Metro/North Front Range non-attainment area under the Clean Air Act. Dust control measures should be taken along the entire length of the Jefferson Parkway.

- When HDR Consulting presented at a previous JPAC meeting, they indicated that the plan for dust mitigation was to follow Colorado requirements. The dust control measures referred to in this recommendation are not specific. It is important to focus dust mitigation efforts on the risk posed by areas near the Rocky Flats site. There is a difference between dust control and dust monitoring.
- The JPAC members present had no objections to this recommendation and agreed to support it as written.

**Recommendation #3 (9 Green Dots)** - JPPHA should carefully consider the site and design of the Greenway Trail.

- Bill Ray stated that the JPPHA has no association with the Rocky Mountain Greenway and recommended that the JPAC make actionable recommendations.
- JPAC members asked if the Greenway Trail crossing plan of the Jefferson Parkway has been considered, and Bill responded that he was not sure.
- The JPAC decided to discuss this recommendation in conjunction with recommendations #9 and #12 (See discussion of recommendation #12).

**Recommendation #4 (9 Green Dots)** - Mitigation measures should be taken to insulate the neighborhood of Leyden Rock from the negative impacts of the Jefferson Parkway during the construction phase and to reduce the impacts of the highway dividing the community, and keep the residents living along the parkway safe when the parkway is operational. Light and sound mitigation measures should be considered carefully, and creative solutions should be explored and implemented since the Leyden Rock residents will only be 65 yards from the edge of the roadway, much closer than any other community along the beltway. An informal poll of nearby residents revealed that almost all are adamantly opposed to traditional sound walls. - One option could be to recess the roadway deeper as it goes through Leyden Rock and build several at-grade, wide pedestrian walkways to partially cover the span and to deflect noise and light pollution. Heavy vegetation could reduce light and sound impacts in the open areas between pedestrian walkways. - Another option could include a sound absorbing tunnel, similar to the one built at the Beijing Zoo. Other creative solutions of this type, beyond traditional sound mitigation measures, should be encouraged. - Traditional sound walls should be avoided, per the wishes of the local residents - **9 Green Dots (for light and sound mitigation measures)** - Light pollution from both highway lighting and car headlights should be avoided as much as possible. Tall light poles should be avoided, and highway lighting should be directed to the roadway and should not be visible to homes lining the Parkway or the surrounding neighborhood. - Signage for the Parkway should be positioned well away from neighborhoods.

- JPAC members asked that some of the recommendations be broadened beyond Leyden Rock, as they may apply to other residential neighborhoods adjacent to the Parkway.
- JPAC members agreed to allow the author to rewrite this recommendation. The revised recommendation is: *Mitigation measures should be taken to insulate the residential neighborhoods from the negative impacts of the Jefferson Parkway during the construction phase and when operational, to reduce the impacts of the highway dividing the community, and to keep the residents living alongside the parkway safe. Mitigation measures should include:*
  - *Regarding sound mitigation, measures should be considered carefully, and creative solutions should be explored and implemented.*
    - *One option could include a sound absorbing tunnel, similar to the one built at the Beijing Zoo. Other creative solutions of this type, beyond traditional sound mitigation measures, should be encouraged.*

- *Another option could be to recess the roadway deeper as it goes through Leyden Rock and build several at-grade wide pedestrian walkways to partially cover the span to deflect noise and light pollution. Heavy vegetation could reduce light and sound impacts in the open areas between pedestrian walkways.*
- *Traditional sound walls should be avoided, per the wishes of the local residents*
- *Regarding light pollution (both highway lighting and headlights from motorists), tall light poles should be avoided, and highway lighting should be directed to the roadway and not visible to homes lining the Parkway or the surrounding neighborhood.*
  - *Signage for the Parkway should be positioned well away from residential neighborhoods.*
- *Regarding safety, guard rails and similar safety measures should be utilized to keep vehicles away from residences in the event of an accident.*

**Recommendation #5 (9 Green Dots)** - JPPHA should consult with the Colorado Department of Transportation (CDOT) Wildlife Program about options for wildlife crossings (<https://www.codot.gov/programs/environmental/wildlife>).

- The author of this recommendation asked to withdraw it from consideration because the concept is covered in other recommendations and Colorado Parks and Wildlife are already engaged in an ongoing discussion with JPPHA about wildlife crossings.
- JPAC members agreed to withdraw this recommendation.

**Recommendation #6 (9 Green Dots)** - The committee should continue meeting during the RFP process and construction of the Jefferson Parkway.

- There would be value in having the JPAC meet with the three final bidders. Because of the confidentiality of the bidding process, the JPAC would not have access to the RFP responses, as the information is proprietary.
- The group discussed whether the JPAC should meet regularly or periodically and agreed that the JPAC should have regularly scheduled meetings during the RFP process that can be canceled as the group sees fit.
- The JPAC agreed to change this recommendation to: *The JPAC should meet regularly (subject to cancellation during the RFP process and construction of the Jefferson Parkway).*

**Recommendation #7 (9 Green Dots)** - Consider innovative approaches to the design and use of the Jefferson Parkway by offering bonus points to RFP respondents who offer creative ideas in their proposals.

- The JPAC agreed to change this recommendation to: *The JPPHA should state in the RFP that evaluation criteria will include creativity, innovation, and aesthetics.*

**Recommendation #8 (8 Green Dots)** - The RFP should state that all National Environmental Policy Act (NEPA)-like standards be followed for the environmental review process even though no federal funds are used.

- The JPAC agreed to withdraw this recommendation.

**Recommendation #9 (8 Green Dots)** - Because there are no safe options to transit north and south on non-motorized transportation, bike/walk pathways should be included in the design to allow pedestrian use across and along the parkway. The bike/walk paths should link up to trails at the north and south ends with the objective of extending safe non-motorized routes throughout the northwest metro area.

- The JPAC agreed to discuss this recommendation in conjunction with recommendations #3 and #12 (see discussion of Recommendation #12).

**Recommendation #10 (7 Green Dots)** - If the current parkway alignment up Indiana Street remains the same, the JPPHA Board should install adequate air monitoring equipment downwind of the construction to monitor for airborne contamination caused by construction activity. Monitoring should be accompanied by a public comment period on the design of the air monitoring equipment and on the consequences of exceedances of specified airborne contamination thresholds (and what those thresholds should be). Monitoring should begin before construction to establish a baseline for air quality. The purpose of the monitoring is to assess whether construction activity is resuspending Rocky Flats contaminants in the air.

- The amendments to this recommendation were driven by the group discussion at the last meeting. The amendment addresses the purpose of the monitoring. The reason for the public comment on the design of the air monitoring equipment is to allow critics such as Gale Biggs to weigh in on how that equipment should be designed.
- The group asked what the action/consequence would be if the monitoring found that construction was resuspending contaminants into the air. It was suggested that there should be public notification if resuspension of contaminants occurs.
- The JPAC discussed the fact that the difficulty of recommending sampling or monitoring on Rocky Flats is that stakeholders have different ideas about what should be tested, to what extent, and to satisfy what concern. There has been an ongoing debate about how much remediation is enough. The best approach is to make sure that all the data is made publicly available.
- The JPAC agreed to allow the author to rewrite this recommendation. The revised recommendation is: *The JPPHA Board should install adequate air monitoring equipment and continuously monitor air quality in the Indiana Street corridor, to assess whether construction activity resuspends Rocky Flats contaminants into the air.*
  - *Before construction, there should be a public process to:*
    - *Design the air monitoring equipment*
    - *Specify thresholds of airborne contamination that should not be exceeded*
    - *Specify consequences of exceedances of those thresholds*
    - *Monitoring should begin before construction to establish an air quality baseline*

**Recommendation #11 (7 Green Dots)** - The Board should require independent testing for plutonium and other contaminants before allowing any design and construction-related, surface-disturbing activities within the Indiana corridor of the Parkway and should require public posting of the testing results. Results showing elevated levels of contaminants should be reported to Colorado Department of Public Health and the Environment (CDPHE) and any other relevant agencies. If contaminant levels exceed CDPHE's standards, construction should pause while mitigation measures are followed, then a resampling should be conducted.

- This recommendation has clearly defined consequences for results that indicate elevated levels of contaminants.
- The group discussed what “independent testing” means. In this context, it is meant to mean “independent of the concessionaire.”
- The JPAC agreed to change this recommendation to: *“The Board should require testing of plutonium and other contaminants independent of the concessionaire before allowing any design and construction-related, surface-disturbing activities within the Indiana corridor of the Parkway and should require public posting of the testing results. Results showing elevated levels of contaminants should be reported to CDPHE and any other relevant agencies. If contaminant levels exceed CDPHE's standards, construction should pause while mitigation measures are followed, then a resampling should be conducted.”*

**Recommendation #12 (7 Green Dots)** - There should be multimodal options along the proposed access road by Leyden Rock. The pathway should connect to all the trailheads (the Greenway Trail, etc.). - Development of the multimodal options should be included in phase 1 of construction.

- This JPAC decided to discuss recommendations #3, #9, and #12 simultaneously.
- The JPAC agreed to condense the three recommendations into one: *“The JPPHA Board should include bike paths, designed to allow pedestrians to cross or travel along the Parkway. Those paths should link up at the north and south ends as the Greenway Trail. Development of multimodal options should be included in phase 1 of construction.”*

#### **NEXT STEPS**

- Peak Facilitation Group will send out a Doodle to find a time for the JPAC to meet before November 15. The group agreed to include daytime and weekend times as options. The group also agreed that, if members are unable to attend in person, there should be a teleconference option available to them. However, meeting face-to-face is preferable.
- Peak Facilitation Group will send out a survey to the JPAC members not in attendance to gather their feedback on the recommendations discussed during this meeting. It will present the language that the group agreed to and ask if they can agree to it as written. If they do not agree, they will indicate their reasoning.
- Peak Facilitation Group will send all JPAC members a separate survey that asks members to indicate their degree of support for the remaining 12 recommendations (#13 - #24).

**Jefferson Parkway Advisory Committee (JPAC)**  
**November 10, 2018**  
**Arvada Waste Water (5555 West 56<sup>th</sup> Ave, Arvada CO 80002)**  
**Meeting Summary – FINAL**

**ATTENDANCE**

*Participants:* Britta Nelson, Ian Owens, Brent Smith, Randy Stafford, Jill-Ellyn Straus, Bill Ray, Gerry Taylor, Brett Vernon, Marc Wills

*Facilitation:* Heather Bergman and Sam Haas

**JPPHA UPDATE**

- As an adjoining property owner to an area where there is proposed drilling, the Jefferson Parkway Public Highway Authority (JPPHA) received a notice about drilling permits. Bill Ray reached out to the applicant to get an understanding of the proposal. The proposal is to conduct fracking via directional drilling on five units and one single well site.
- One of the sites was on the western side of the dog park; one was on the west shore of Stanley Lake; two were on private property adjoining the Rocky Flats Refuge; and the last will be located in Superior, north of Highway 128. Many of the mineral rights under the wildlife refuge are not owned by the federal government. The proposal is to drill down about 7,000 feet and a mile horizontally.

**REVISIONS TO RECOMMENDATIONS #1-12**

JPAC members who were unable to attend the October 23 meeting provided feedback via an online survey about recommendations #1-12, on which the group had reached agreements.

**Recommendation #3:** The JPPHA Board should include bike paths designed to allow pedestrians to cross or travel along the Parkway. Those paths should link up at the north and south ends and with the Greenway Trail. Development of multimodal options should be included in Phase 1 of construction.

- One person recommended clarifying that “multi-modal” should be used instead of “bike paths,” and “pedestrians.”
- The group agreed to change this recommendation to *“JPPHA should include multi-modal paths designed to allow users to cross or travel along the Parkway. These paths should link up at the north and south ends and with the Greenway Trail. Development of multimodal options should be included in Phase 1 of construction.”*

**Recommendation #4:** Mitigation measures should be taken to insulate the residential neighborhoods from the negative impacts of the Jefferson Parkway during the construction phase and when operational, to reduce the impacts of the highway dividing the community, and to keep the residents living alongside the parkway safe. *(Specific bullets will be written out in the final version of the recommendation).*

- One person recommended changing any reference to Leyden Rock to “residential neighborhoods.”
- The group agreed to change the second bullet in the recommendation to: *“Another option could be to deepen the roadway in residential neighborhoods as appropriate and build several at-grade wide pedestrian walkways to partially cover the span to deflect noise and light pollution.”*

**Recommendation #7:** The JPPHA should state in the request for proposals (RFP) that evaluation criteria will include creativity, innovation, and aesthetics.

- One person suggested changing this recommendation to: *“The JPPHA should state in the RFP that evaluation criteria for the mitigation designs will include creativity, innovation, and aesthetics.”*

- *The group agreed to keep the original language.*

**Recommendation #8:** The JPPHA Board should install adequate air monitoring equipment and continuously monitor air quality in the Indiana Street corridor, to assess whether construction activity re-suspends Rocky Flats contaminants into the air. Monitoring should begin before construction to establish an air quality baseline. Prior to construction there should be a public process to: Design the air monitoring equipment, specify thresholds of airborne contamination that should not be exceeded, and specify consequences of exceedances of those thresholds.

- One person would like this recommendation to be withdrawn, and one person suggested rewording it so that it does not imply that members of the public are subject matter experts on air monitoring design.
- The group agreed to change “*design the air monitoring equipment*” to “*evaluate and comment on air monitoring equipment.*”

**Recommendation #9:** The Board should require testing of plutonium and other contaminants independent of the concessionaire before allowing any design and construction-related, surface-disturbing activities within the Indiana Street corridor of the Parkway and should require public posting of the testing results. Results showing elevated levels of contaminants should be reported to Colorado Department of Public Health and Environment (CDPHE) and any other relevant agencies. If contaminant levels exceed CDPHE's standards, construction should pause while mitigation measures are followed, then a resampling should be conducted.

- Three people suggested changes to this recommendation, emphasizing the need to specify an exact list of contaminants that an independent expert will sample.
- The group agreed to change the recommendation to: *JPPHA should require for testing of plutonium and also engage an expert independent of the concessionaire to identify any additional Rocky Flats contaminants to sample within the Parkway right-of-way and other impacted areas before allowing any construction-related, surface-disturbing activities, and the JPPHA should provide a public comment period to review the test results.*
  - *Results showing elevated levels of contaminants should be reported to CDPHE and any other relevant agencies.*
  - *If contaminant levels exceed CDPHE's standards, construction should pause in the area where contaminants are found while mitigation measures are followed, then a resampling should be conducted.*

#### **RECOMMENDATIONS #13-24**

JPAC members discussed recommendations #13-24 and reached agreement on final wording to submit to the JPPHA. The recommendations were discussed in order of which ones received the highest level of consensus in the pre-meeting survey to the ones that received the lowest level of consensus.

**Recommendation #16 (Q5):** JPPHA should provide clarity for the public on how the Jefferson Parkway helps achieve current Front Range transportation objectives and why the JPPHA chose the Indiana Street alignment over other alternative alignments (e.g., Highway 93).

- *The group agreed to submit this recommendation as written.*

**Recommendation #14 (Q3):** Measures to maintain the continuity of the Leyden Rock neighborhood should be a priority. The city of Arvada embraces community connectivity and has invested significant time and resources to bring neighborhoods together. The Leyden Rock subdivision has organically become a strong community, with 15 community events in 2017 which drew over 5,200 total participants. *(Specific bullets will be written out in the final version of the recommendation).*

- One of the bullets in the recommendation says that “the City of Arvada and the Leyden Rock Metro District may need to partner with JPPHA to maintain the character of the Leyden Rock neighborhood.”
- The group agreed to change the previous bullet to: *“JPPHA should pursue partnerships with Arvada and the Leyden Rock Metro District.”*

**Recommendation #13 (Q2):** JPPHA should ensure that the objectives of all the master plans for the counties and municipalities adjacent to the Parkway are included in the final design.

*The group agreed to submit this recommendation as written.*

**Recommendation #17 (Q6):** The public (residents, City of Arvada, Jefferson County, etc.), should not be financially responsible for the Jefferson Parkway. The RFP should require the private investment firm to cover the shortfall if the revenue does not cover operations costs.

- The group discussed the relevancy of this recommendation. Bill stated that JPPHA has had conversations about the possibility of a compensation event, which is unlikely but would be catastrophic. They have talked about who would be responsible for such an event. If there was a continued shortfall in revenue, the public would not be responsible. JPPHA’s intent is that there would be a 100% risk transfer to the private partner.
- The private partner will constantly be looking for opportunities for revenue optimization. It is not in their interest to charge a lot of money for cars to travel on the Parkway.
- The group discussed the need to include the timeframe in this recommendation.
- The group agreed to change this recommendation to: *“The JPPHA should ensure in perpetuity that local communities do not subsidize the operation and maintenance of the Parkway.”*

**Recommendation #18 (Q7):** The design should include provisions for an access road from the northwest corner of the Leyden Rock neighborhood to the Candelas Parkway. The access road could: Be slaved to the parkway, or a separate roadway. Additionally, it could be tolled or un-tolled. Increase utilization of the parkway by giving Leyden Rock Residents access they would not otherwise have. The increase in tollway utilization could be significant. Reduce traffic on Indiana and delay the need for expansion on that roadway. Provide an alternative route for access by first responders if 82nd Street is blocked by flood, fire, or accident. Provide residents with an additional escape route if the area was threatened by a natural or human-made disaster, Reduce local opposition to the Parkway. The City of Arvada may need to consider partnering with the Authority in this effort since the access road would work towards many of the City’s priorities.

- Implementing this recommendation would likely cost between \$30-40 million. The Arvada Fire Protection District asked for a similar access road.
- *The group agreed to move the points about safety higher up in the recommendation, insert bullet points, and submit the recommendation as written.*

**Recommendation #21 (Q10):** JPPHA should seek to open the records of the Special Grand Jury 89-2.

- Some JPAC members did not support this recommendation as written because of legal issues. Any entity who files a motion must have standing. The author of the recommendation emphasized the importance of revealing information that has not been publicly released and shared the concern that construction could unearth a nuclear dump site. They would like the JPPHA to develop a response plan for this unlikely but potentially catastrophic scenario.
- The group agreed to rewrite this recommendation to: *“The JPPHA should have a contingency plan for the unlikely but potentially disastrous event that a buried nuclear dump site is unearthed during construction of the Parkway.”*

**Recommendation #22 (Q11):** JPPHA should change the alignment of the Jefferson Parkway to go up Highway 93 instead of Indiana Street to avoid conflict regarding public health and contaminants from Rocky Flats; the west side of Rocky Flats is less contaminated than the east side.

- JPAC members who did not support this recommendation shared their concern that it is outside the charter/scope of the group.
- The group agreed to present the recommendation as written but specify that: *“A majority of the JPAC does not support this recommendation because it is outside the scope of the group’s mandate and alignment decisions have already been made. Other members of the JPAC support this recommendation because it would avoid any controversy surrounding Rocky Flats contaminants.”*

**Recommendation #24 (Q13):** Use Indiana Street as the northbound lanes of the Parkway and construct the new southbound lanes in the Rocky Flats right-of-way (from west 96<sup>th</sup> Avenue north to Highway 128). A Parkway entrance/exit could be provided at 96<sup>th</sup> Avenue onto Indiana Street.

- JPAC members who did not support this recommendation stated that it would take away opportunities for local residents and that taking away access to a public road should not be an option.
- The author of this recommendation emphasized that travelers would likely not use the Parkway if they had the option to use Indiana Street. Also, re-using an existing right-of-way would make it necessary to only build two additional lanes instead of four, thereby decreasing the overall construction costs.
- The group agreed to present the recommendation as written but specify that: *“The majority of JPAC members did not support this recommendation because they believe away transportation opportunities from local residents. These members oppose the idea of taking away access to a public road. Additionally, people traveling from east of Indiana Street would not have access. A minority of the JPAC supports this recommendation because they believe that few people will use the Parkway if they have the option to use Indiana Street. Additionally, they believe that the re-use of an existing right-of-way and the necessity of only adding two lanes to Indiana Street would substantially decrease the cost of construction.”*

**Recommendation #15 (Q4):** JPAC should send the following material from the May JPAC meeting to the JPPHA Board to consider and review and specify what they would like the JPPHA Board to do with this information: Randy Stafford's position paper, Jon Lipsky's presentation, the video recording and transcript of Kristen Iversen's talk, the presentation material from Colorado Department of Public Health and Environment (CDPHE).

- The JPPHA Board has already received all these materials. When Peak Facilitation writes their final report, all the meeting summaries will be attached.
- *The group agreed that all the materials referenced above will be attached to the final report submitted to the JPPHA and that it was unnecessary to present the recommendation above to the Board.*

**Recommendation #23 (Q12):** JPPHA should take steps to promote the utilization of the Parkway. They should minimize or eliminate tolls (or offer other funding mechanisms), and they should solicit state or federal funding for the project.

- Those in support of this recommendation shared that people would be unlikely to use the Parkway if the toll was expensive. They were also skeptical that the Parkway would be fully developed as the contiguous link for the beltway. Those in opposition to this recommendation stated that it is the job of the JPPHA to promote use of the Parkway and emphasized that the deadline to make decisions about how the Parkway will be funded have passed.
- The group agreed to revise this recommendation to: *“During the period of time when the Parkway is not contiguously connected to the rest of the beltway, JPPHA should promote utilization of the Parkway by using financial incentives or other methods.”*

**Recommendation #19 (Q8):** JPPHA should sponsor an independent review of all the past studies of both soil contamination and public health impacts by a qualified national institution that is independent

of the Department of Energy (e.g., the National Academy of Sciences). The independent reviewer should assess risks and conclusions surrounding public health impacts and review sampling techniques.

- The purpose of this recommendation is to reach a conclusion about the accuracy of past studies. The recommendation pertaining to the soil study does not cover issues related to public health impacts, which has been a topic of debate. There are different perceptions and levels of comfort with risk.
- Public health analyses are typically done as part of an after-action review or literature review that the independent expert would conduct with the soil study. Those who do not support this recommendation stated that it is redundant and that they did not see much value in doing a retrospective review of past studies.
- The JPPHA did an environmental review of places where the Parkway would interchange with state highways, so it did not cover issue of public health because no interchanges are proposed in the areas where there is concern about contaminants. Indiana Street will not connect to the Parkway.
- The group agreed to submit the recommendation as written but take out the part about the independent expert reviewing sampling techniques and specify that: *"A majority of the JPAC does not support this recommendation because they question the necessity of conducting a retrospective review and believe it would be redundant. Others support this recommendation, emphasizing the importance of clarifying the public health impacts associated with Rocky Flats."*

**Recommendation #20 (Q9):** To alleviate Federal Aviation Administration (FAA) concerns and reduce the cost of their proposal to lower the Parkway 20 feet and construct a tunnel, the JPPHA should change the alignment of the Parkway to "joint use" of the current right-of-way of CO Highway 128 from its intersection with the end of the Northwest Parkway extension. From this point to where the Parkway turns south at Indiana Street, the CO 128 right-of-way could be a shared road which could be tolled or not tolled.

- This recommendation is moot because the alignment has been changed so that the Parkway does not go through the runway protection zone.
- The group agreed to withdraw this recommendation.

#### **NEXT STEPS**

- Peak Facilitation will prepare a summary of this meeting and a final report that outlines the JPAC's recommendations and process. It will include all the meeting summaries as an attachment. Peak Facilitation will also prepare a PowerPoint that presents all the group's recommendations for Brett Vernon, Ian Owens, and Randy Stafford to present at the JPAC meeting on Thursday, November 15.
- There will be 30 minutes provided for JPAC's presentation to JPPHA, including time for questions and discussion.
- The group agreed that the final report will also include Randy Stafford's rebuttal to CDPHE's presentation sent to the group on July 16. It will specify that this was a correspondence sent by one JPAC member after a meeting.
- Bill Ray will keep JPAC members up-to-date on what the Board discusses and which recommendations they approve.

**ATTACHMENT E: JPAC MEMBER RANDY  
STAFFORD'S COMMENTS ON COLORADO  
DEPARTMENT OF PUBLIC HEALTH'S MAY 17  
PRESENTATION**

***Comments on CDPHE's Presentation  
to the Jefferson Parkway Advisory Committee  
on May 17<sup>th</sup>, 2018***

*Randy Stafford, Member  
Jefferson Parkway Advisory Committee  
July 16, 2018*

**Introduction**

This paper contains comments on the Colorado Department of Public Health and Environment's (CDPHE's) presentation to the Jefferson Parkway Advisory Committee (JPAC) at its meeting on May 17<sup>th</sup>, 2018. It is written for consideration by my fellow JPAC members, as a rebuttal of many points made by CDPHE in its presentation.

There were three CDPHE presenters at the meeting. In order of appearance they were:

1. Lindsay Masters, presenting on Rocky Flats history;
2. Carl Spreng, presenting on contamination and risk; and
3. Mike Van Dyke, presenting on CDPHE's cancer studies.

The remaining sections of this paper are organized by presenter, with comments referenced to the elapsed time in the video recording of the meeting at which the presenter's point was made.

**Comments on Points Made by Lindsay Masters**

**00:14:15** Ms. Masters describes the "physical investigation, sampling, and cleanup of Rocky Flats under CERCLA," stating: "How that typically happens is you interview workers, you collect as much information as you can from records, interviews, that kind of thing, you conduct sampling of the environment, groundwater, sediment, air." Thus the cleanup approach was based on the institutional memory of the employees still present in the 1990s, and on the records kept by the Department of Energy (DoE) contractors who operated the Rocky Flats Nuclear Weapons Plant, both of which were notoriously incomplete and poor, as discovered and reported by plaintiffs' counsel Howard Holme in *Church v. United States*. In other words, the cleanup approach was not based on the EPA's Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), which is a "a single, nationally consistent guide for verifying that radioactively contaminated sites are cleaned to standards" (see <https://www.orau.org/environmental-assessments-health-physics/publications/marssim.aspx>). In fairness, MARSSIM wasn't yet published

when the Rocky Flats Cleanup Agreement was reached in 1996, but it represents a stricter guideline and process than that used for the Rocky Flats cleanup.

Further, in relation to the quality of the Rocky Flats cleanup, JPAC member Britta Nelson provides the following comments, citing the 2006 General Accounting Office (GAO) Report to Congressional Requestors on the Nuclear Cleanup of Rocky Flats (<https://www.gao.gov/products/GAO-06-352>):

*Oversight:* An item that caught my eye is on page 39 which states that DOE did not carry out some aspects of its cleanup oversight responsibilities, including not independently reviewing the quality of the data collected throughout the cleanup and not completing verification of the contractor's actions to remediate radiologically contaminated surface soil. "DOE's failure to conduct independent assessments is particularly troubling because of the importance of the cleanup and residual contamination data. These data were not only the basis for EPA's and Colorado's approvals of the accelerated cleanup actions, but also the foundation for EPA's and Colorado's pending decisions about the overall sufficiency of the site's cleanup. Without independent assessments of the contractor's data quality control measures, DOE had no assurance that the controls were working as intended. Also troubling was that EPA and Colorado—the regulatory agencies that jointly approved the site's quality assurance project plan and are responsible for ensuring its implementation—were unfamiliar with these assessment requirements." (p. 49)

*Scanning (90% or 100%?):* There is discussion in the GAO report on use of the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (throughout, but see pp. 99-106). MARSSIM is uniform guidance for conducting final surveys to demonstrate compliance with specified radiological cleanup levels and was developed by the DOE, EPA, DOD, and NRC years after the Rocky Flats cleanup strategy had been approved. MARSSIM recommends 100 percent scanning of areas most likely to be contaminated with radionuclides. The Rocky Flats site manager requested the contractor develop a site-wide surface radiological survey using MARSSIM, but the MARSSIM approach was inconsistent with the approved cleanup strategy, which required removal of contamination to a 90 percent confidence level, and would add time and cost, so this approach was rejected by DOE. The report indicates the MARSSIM approach was applied to the 903 lip area which was one of the most contaminated areas.

*Revised verification activities:* Due to time and cost constraints, DOE reduced the scope of the contractor's planned scanning and sampling activities. Part of the contractor's final scanning and sampling plan (2005) included scanning the entire site for residual plutonium in surface soil with sodium iodide detectors on a helicopter, but the aerial scan did not achieve its projected sensitivity. "Whereas detection of 50 picocuries of plutonium per gram of soil over 80 square meters was the criterion for success, according to the contractor's final plan, the scanner achieved this detection level for only 25 percent of the site, owing to the moisture content in the ground and the altitude of the helicopter's flyover." (p. 103). The

report also states DOE did not have the Oak Ridge Institute for Science and Education's (ORISE) fully implement the final independent verification plan or publicly explain its reasoning. DOE did not have ORISE complete the planned assessment of the aerial and ground-based scanning or the planned assessment of the contractor's investigations of the results of the aerial and targeted ground-based scans. The report indicates that the DOE decided the results of these remaining assessments would not justify their completion, particularly because the aerial survey had failed to find any anomalies.

**00:15:10** Ms. Masters states "Initial cleanup projections were much higher than the actual cleanup costs." In fact the initial projections for the cleanup cost and schedule were \$37,000,000,000 (37 billion dollars) and 70 years (<https://www.energy.gov/articles/doe-certifies-rocky-flats-cleanup-complete>). But the actual cost and schedule were \$7,700,000,000 (7.7 billion dollars) over ten years (<https://www.gao.gov/products/GAO-06-352>). What expenses were spared, what risks left remaining, to make the actuals for this project only 20% of the estimates?

Britta Nelson also adds the following comment in relation to the above point, citing the above-referenced GAO report:

Another aspect that may be worth analysis is the contractor's financial incentive. The contractor could earn as much as \$560 million in incentive fees for finishing the work earlier and at lower cost (p. 5 and elsewhere in the GAO report). Since DOE didn't conduct independent assessments of the contractor's work, it's an unknown if corners were cut in order to maximize the incentive.

**00:17:40** Ms. Masters states "Refuge areas, which are generally that Peripheral Operable Unit (POU), and offsite areas, were also investigated." The corresponding bullet on the slide she's speaking to says "Refuge and offsite areas investigated and sampled." But the fact of the matter is that the vast majority of the soil sampling occurred in the Central Operable Unit (COU), i.e. former industrial area, of the site. In the POU / refuge area, CDPHE divided the area into a grid of 30-acre squares, and only took five samples per 30-acre square. Obviously this kind of sampling methodology has a high likelihood of missing plutonium hotspots. In the Jefferson Parkway right-of-way, the CDPHE sampled at (only) 14 locations, finding a concentration at one or more locations of 8.8 pCi/g, which represents 450x background radiation (see <https://www.colorado.gov/pacific/cdphe/rocky-flats-highway-construction>).

**00:21:00** Ms. Masters states "The refuge lands were determined to not require remediation because sampling showed it [plutonium concentration in soil, presumably] was below agency action levels." Herein lies the crux of the problem: what if the limits are not conservative enough? CDPHE is regulating to established contamination levels. But the available evidence (credible cancer studies, and anecdotal evidence) suggests that contamination even within established levels has

an observable negative effect on human health in the area. The existing amount of contamination offsite, and therefore in the refuge, is not protective of human health. Who should own this problem?

**00:23:00** Ms. Masters makes an analogy, using a speed limit sign on a road, about what environmental regulators do. She identifies CDPHE as a regulatory agency, and states “We don’t regulate to background, we don’t regulate to numbers that we make up; we are bound by laws in implementing regulations, policies, and guidance. And those help us set, or set for us, numerical speed limits. So, these numerical standards that were applied, in many contexts, are not unique to Rocky Flats. ... So, we’re cops, we regulate what the speed limit (for a simple analogy) says, but we don’t make the speed limit.” In my opinion this is an immoral statement and position by CDPHE. Its stated mission, according to its 2016-2019 strategic plan, is “To protect and improve the health of Colorado’s people and the quality of its environment.” (<https://www.colorado.gov/pacific/sites/default/files/OPP-StrategicPlan2016-19-July2017.pdf>). But as long as it can say it’s doing its job of regulating according to laws, then it is absolved of responsibility for the demonstrated public health impacts of Rocky Flats contamination. Again, who is to own this problem?

**00:24:20** Ms. Masters states “For your reference, these environmental standards are health-based; they’re not background-based. ... You want a health-based standard for human beings and ecological considerations.” But again, what if the standards are too high? As cited in my position paper *The Public Health Risk of Disturbing the Soil Along Indiana Street for Jefferson Parkway Construction*, several subject matter experts, true pioneers in the nuclear health physics field, with much greater qualification in these matters than anyone at CDPHE, have testified under oath that “there is no dose, no exposure, to ionizing radiation so low that the risk is zero” and “the cancer risk is much, much greater than it was thought to be when these earlier standards [of permissible dose] were established.” In addition the National Academy of Sciences has published research on the health effects of low-level ionizing radiation, finding that a single alpha particle can have mutagenic effects on a human cell: <http://www.pnas.org/content/pnas/94/8/3765.full.pdf>. The US National Research Council sponsored a 2007 report on health risks from exposure to low levels of ionizing radiation, which concludes that any exposure to ionizing radiation is potentially harmful (<https://www.nrc.gov/docs/ML1233/ML12335A625.pdf>).

### **Comments on Points Made by Carl Spreng**

**00:27:20** Mr. Spreng summarizes residual plutonium contamination in the refuge area as 1.1 picocuries per gram of soil. But that figure is an *average* across all samples CDPHE recorded in the refuge area. In my opinion it is completely inappropriate and irresponsible to average plutonium concentrations from different locations in the refuge, as that practice totally neglects the effects of hotspots.

Breathing dust from a hotspot would be dramatically different than breathing uncontaminated dust. CDPHE's own data reports a hotspot of 20 pCi/g somewhere in the refuge area (<https://www.colorado.gov/pacific/cdphe/rocky-flats-risks-to-refuge-visitor>) - a value representing 1024x background radiation. Mr. Spreng also emphasizes that a picocurie is a trillionth of a curie, as if to minimize the amount of radioactivity represented by a picocurie. However a picocurie equals 2.22 disintegrations per minute (dpm), another unit of measure for radioactivity. Thus if a person inhaled a particle of dust laden with a picocurie of plutonium, cells in that person's body would immediately begin suffering 2.22 alpha emissions per minute for the rest of that person's life.

**00:27:45** Mr. Spreng explains how CDPHE translates the inappropriately averaged plutonium concentration into an assumed dose for a human, and then translates the assumed dose into an assumed excess cancer risk for that human. The translation from concentration to dose assumes some kind of exposure scenario. But there are a lot of ways in which these translations, and the conclusions resulting from them, might be wrong. The translations from concentration to dose, through exposure scenarios, are based on assumptions and mathematical modeling. In reality, all it probably takes for a person to get plutonium into their lungs is one unlucky breath, e.g. on a windy day east of Rocky Flats, through dust blowing in the air. Mr. Spreng concludes that the excess cancer risk is less than one in a million. Even if that were true, what would Mr. Spreng say to the family of that one person who developed cancer? We sacrificed your loved one for a tollway?

**00:29:45** Mr. Spreng begins speaking to the slide reproduced as Figure 1, below. Mr. Spreng seems to use this slide to attempt to trivialize the risk represented by a small dose of plutonium in the body. But it's a false equivalence – alpha radiation from plutonium in the body is qualitatively different from all other types of radiation shown on Mr. Spreng's slide. None of the non- Rocky Flats radiation sources on Mr. Spreng's slide are alpha radiation sources. Alpha particles emitted by decaying plutonium atoms bombard immediately surrounding cells in the body, causing mutations of those cells. The other types of radiation on Mr. Spreng's slide may not have that highly localized effect. I find it very disappointing, given CDPHE's mission, that Mr. Spreng uses this slide, attempts to make false equivalences, and attempts to trivialize the risk of plutonium in the human body.



### Radiation Dose Chart

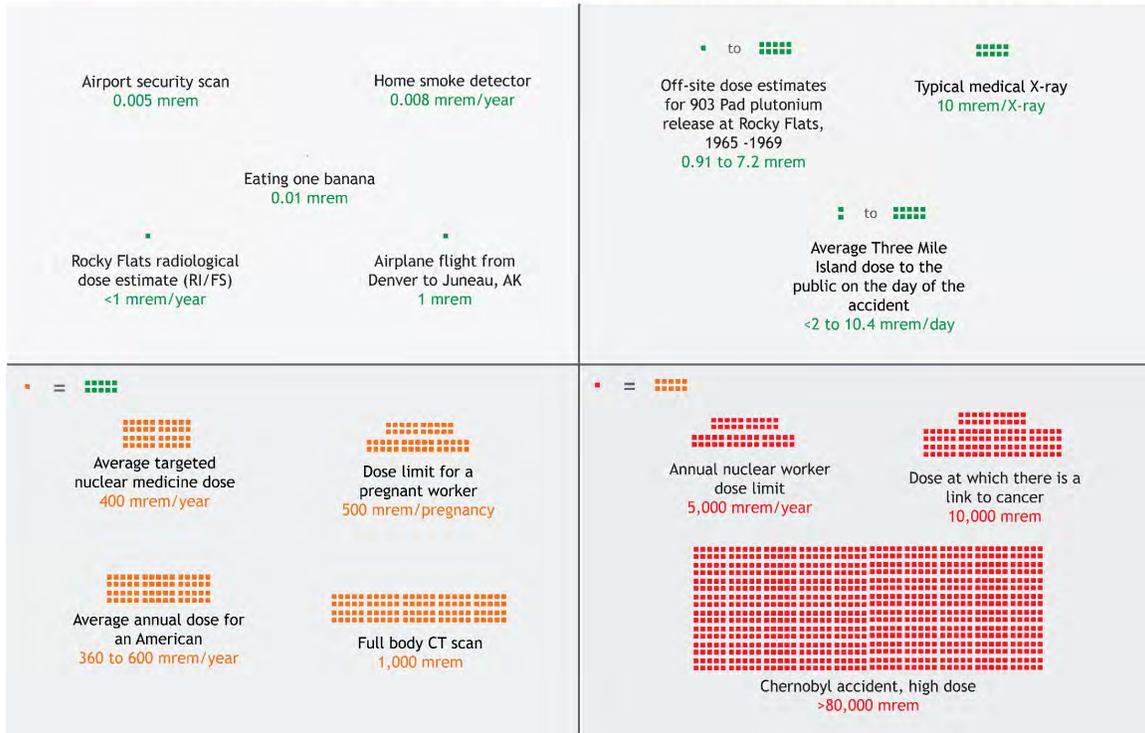


Figure 1: Carl Spreng’s slide attempting to equate internal alpha radiation doses to doses of other kinds of radiation. It is a false equivalence – internal alpha radiation is qualitatively different than other kinds of radiation. None of the non- Rocky Flats sources of radiation shown on this slide are alpha radiation sources.

**00:35:40** Mr. Spreng begins discussing the impact of a small amount of ionizing radiation, from his viewpoint, using a slide depicting the “Linear No-Threshold model (LNT).” He asserts that “the risk [of cancer from a small amount of ionizing radiation] is very, very small. Regulations provide these limits, below which the risk per dose is negligible.” But five public health studies cited in my position paper, and the anecdotal evidence, suggest otherwise. They all found increased incidence of cancer in the downwind population, at rates of 24-29% more lung cancer, and even 90% more bone cancer. Furthermore the LNT is controversial, in part because it is based on whole-body absorbed dose. Whereas an alpha-emitting particle in the body delivers a high dose to surrounding cells, but a very low overall body dose. The LNT can’t account for that scenario.

**00:37:20** Mr. Spreng begins speaking to a slide titled “Can inhaling even one particle of plutonium cause cancer?” He states “we assume the risk is not zero but it’s very, very small.” That is an assumption on his part. Referring to background radiation, he states “plutonium is found in my backyard and your backyard, and that’s due to atmospheric testing of nuclear weapons back in the 1950s and 1960s.” Left unsaid is that plutonium concentrations in soil downwind of Rocky Flats,

including in the Jefferson Parkway right-of-way, are hundreds of times background levels, so common sense suggests there are hundreds of times greater chances of exposure there than in our backyards. He cites a study by a DoE contractor stating “millions of dust particles contaminated with PuO<sub>2</sub> must be inhaled in order for significant radiation doses to be delivered to key body organs/tissues.” But that statement raises the question of what is a “significant” radiation dose to a key body organ, and how is that decided, and is it the same for every person?

**00:37:55** Mr. Spreng asserts that Rocky Flats is very well-studied, and that thousands of samples were collected both onsite and offsite in air, soil, and groundwater. However as previously stated the vast majority of the soil samples were taken in the COU, with comparatively sparse sampling in the POU and offsite. And counter to his point, there has been absolutely no air contamination monitoring during the construction of the new King Soopers shopping mall at Indiana Street and Candelas Parkway, as just one example of construction in the area, to assess whether soil disturbance by that construction activity is releasing radioactive dust into the air.

**00:38:50** Mr. Spreng begins speaking to a slide titled “Would Parkway construction release harmful levels of plutonium?” He refers to the 23-volume CERCLA environmental investigation’s conclusion that the refuge area (including the parkway right-of-way) and offsite areas are suitable for unlimited use and unrestricted exposure. His slide says “lots of samples” were taken in the parkway right-of-way, but according to <https://www.colorado.gov/pacific/cdphe/rocky-flats-highway-construction>, only 30 samples were taken at only 14 locations in the right-of-way. He states that the maximum plutonium concentration in the right-of-way is 8.8 pCi/g (450x background), and the (meaningless) average is 1.4 pCi/g, both of which are well below regulatory standards. Mr. Spreng does not acknowledge in his presentation that two previous CDPHE executive directors in the 1970s, R.L. Cleere and Dr. Frank Traylor, both took the position that the 50 square-mile area surrounding Rocky Flats was too contaminated to be suitable for any use, whether residential, commercial, or industrial. This position of CDPHE seemed to change after CDPHE became a DoE-funded state partner as a result of the 1980 CERCLA (Superfund) legislation. Mr. Spreng only seems interested in regulating to standards, even if those standards are not conservative enough according to ample evidence of negative public health impact. He and CDPHE do not seem willing to own the public health impact question, despite CDPHE’s stated mission, instead choosing plausible deniability through their methodologically-flawed cancer studies, which are the lone dissenters from all other public health studies.

### **Comments on Points Made by Mike Van Dyke**

**00:43:20** Mr. Van Dyke states men have a one-in-three lifetime chance of cancer, and women a one-in-four chance, mostly due to prostate, breast, and skin cancer. Even if this is context-setting, why does he make this point? Does the existence of

other carcinogenic risks absolve our local, state, and federal governments of protecting us citizens from the cancer risk of Rocky Flats contamination?

**00:44:47** Mr. Van Dyke dramatically makes the point that smoking is the number one risk factor for cancer, as part of setting the stage for confounding effects in epidemiological studies of cancer in the population “around” Rocky Flats.

**00:47:00** Mr. Van Dyke repeats the point that CDPHE’s studies compared the rates of cancers (of different kinds) “around Rocky Flats” to the rest of the Denver metro area.

**00:47:40** Introducing the CDPHE studies’ findings, Mr. Van Dyke cites “ten different neighborhoods around Rocky Flats.” He states that in 186 of 190 comparisons of cancer rates between the ten neighborhoods “around Rocky Flats” to the Denver metro area in general, in CDPHE’s 1998 study, there was no elevation in any of those cancer rates around Rocky Flats. Similar results were obtained in 2016. There were a few exceptions, which Mr. Van Dyke attributed to smoking. He claimed to have examined the individual cases in exception, and confirmed those cases involved smoking. He also claimed to do neighborhood-level analysis and find more smoking in the neighborhoods with higher lung and esophageal cancer rates. And he suggested higher prostate cancer rates in Boulder were due to better screening for prostate cancer in the more affluent population in Boulder county. Of course, Boulder is not a downwind neighborhood “around” Rocky Flats, but more on that below.

**00:52:00** Mr. Van Dyke basically concludes that any elevated rates of cancer found in the CDPHE studies are due to tobacco use and not environmental exposure. He acknowledges that the studies are not perfect, and a lot more time and money would be required to do better studies.

**General Comments on Mr. Van Dyke’s Presentation:** The major methodological flaw in the CDPHE cancer studies is that the areas they considered to be “around” Rocky Flats were not so at all. Figure 2 below shows the map of the “neighborhoods” that the CDPHE studies considered to be “around” Rocky Flats. The CDPHE studies considered vast uncontaminated areas to be “around” Rocky Flats, so in effect compared cancer rates in one part of the broad Denver / Boulder metropolitan area to cancer rates in other parts of the broad Denver metropolitan area. Dr. LeRoy Moore has authored a more detailed critique available at <https://drive.google.com/open?id=1bl3BCdPU8Os8e4Vf2CooXG1Q2UEk4ANQ>.

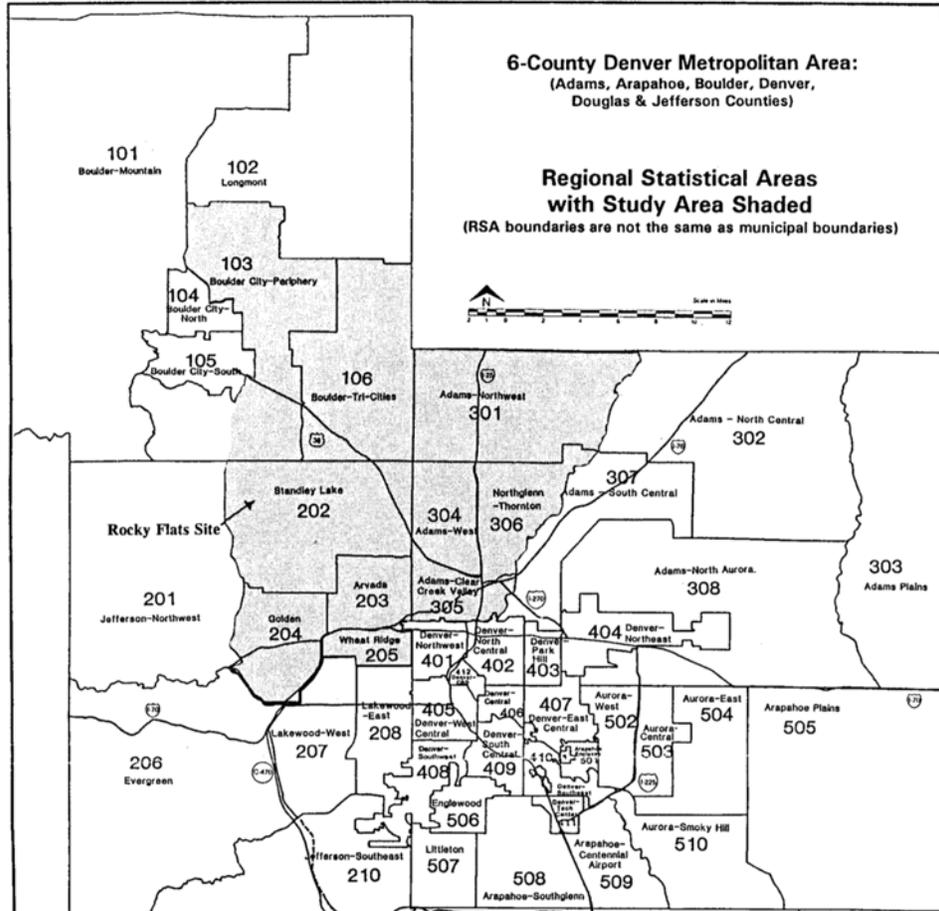


Figure 2: The “neighborhoods”, as Mr. Van Dyke called them, that the CDPHE studies considered to be “around” Rocky Flats (shaded grey). These are actually Regional Statistical Areas (RSA). As can be readily seen, the vast majority of these areas are not downwind of Rocky Flats and therefore not contaminated. In effect, the CDPHE studies compared broad Denver/Boulder metropolitan areas to other broad Denver metropolitan areas, so of course there would be little difference.

At the May 17 JPAC meeting, Dr. Sasha Stiles was in the audience. Dr. Stiles is a practicing MD with past experience in epidemiology. She had the following summary comments on Mike Van Dyke’s presentation:

Yes smoking is an important variable. So is being a child. So is having a propensity for digging in dirt. So is soil data, wind data, water data and time in a given plutonium zone. However to just attribute to smoking any culpability of plutonium in causing increased cancer risk is incomplete and dishonest. The trend [of increased cancer incidence around Rocky Flats, according to other studies and evidence] is striking, and to deny it is to neglect the wellbeing of the population. Furthermore the epidemiology of the CDPHE study is sloppy.

Dr. Stiles has further provided me a detailed analysis on why CDPHE’s epidemiology is sloppy, which I’m happy to share upon request. Fundamentally it centers on their

choice of sample (too much aggregation), data skew by too few cases, and inadequate data on smoking in the studied population.

### **Comments on CDPHE Presenters' Answers to JPAC Questions**

**00:53:15** Mr. Van Dyke confirms that plutonium-related cancers can have a latency period measured in decades.

**00:53:30** Mr. Van Dyke indicated he had no idea why the CDPHE studies included Regional Statistical Areas (RSA) that don't have close proximity to Rocky Flats, e.g. Boulder. He stated "there's a lot further out than I would have designed the study personally."

**00:54:20** In response to a question about people with previously-undiagnosed cancer moving into the area and thereby skewing study results, Mr. Van Dyke acknowledged "that's a weakness of these kinds of studies. ... We definitely have cancers from people that used to live there that are living somewhere else that aren't included in that study. But we also have cancers from people who are living someplace else for a long time who moved into that area. So we have both. We like to think it evens out; nobody really knows for sure. But that is definitely a weakness of this kind of study." This lack of precision – "we like to think it evens out; nobody really knows for sure" – is enough to invalidate the study by itself, let alone the inclusion of uncontaminated areas wrongly considered to be "around Rocky Flats".

**00:56:25** In response to a question about whether there have been any studies on non-cancer illness in surrounding neighborhoods, Mr. Van Dyke answered that there haven't been any such studies on residents in the Rocky Flats vicinity.

**00:56:40** A question was posed to Carl Spreng, "what if the regulatory limits are wrong? What if they're not conservative enough?" Mr. Spreng answered "those can change, but these are based on decades of information. If they do change, ... we change with them." To which my comment is, the contamination and dose limits to which CDPHE is regulating are based on decades-old information, and mankind's knowledge of the health effects of low-level ionizing radiation is evolving at a rate much faster than the pace at which standards change. As a result, the residents around Rocky Flats are unwittingly part of an unintentional experiment on the public health effects of plutonium and other contamination from a nuclear weapons plant. It is unethical and inhumane for CDPHE to proactively and vehemently deny this reality and allow this circumstance to continue and even intensify.

### **Summary**

State and local governments look to the Colorado Department of Public Health and Environment for the official government position on whether areas downwind of

Rocky Flats, including the Indiana Street corridor, are safe for public health in the face of unremediated Rocky Flats contamination. But astonishingly, given its mission to protect the health of Colorado's people, the CDPHE is complicit in denialism and lacking in moral courage.

All other public health studies besides CDPHE's have found increased cancer incidence in the downwind population. And CDPHE's study has serious methodological flaws. Most importantly, people are ***still dying*** of rare radiosensitive cancers immediately downwind of Rocky Flats, as evidenced by the two cases of cardiac angiosarcoma in the new Five Parks neighborhood in the last few years.

There was a time when CDPHE took cautious and responsible positions with respect to Rocky Flats. CDPHE executive directors Roy Cleere and Dr. Frank Traylor, in 1973 and 1979 respectively, both recommended against residential and commercial development in a 50-square mile area surrounding Rocky Flats, due to contamination in the environment from the nuclear weapons plant. That contamination is permanent, and unremediated outside the Central Operable Unit. But sometime after 1979 CDPHE's position changed to one of denialism and dubious reassurances – perhaps as a consequence of CDPHE receiving Department of Energy funding since 1996 if not earlier.

There is also the question of qualifications. Current Jefferson County Public Health director Dr. Mark Johnson, MD, MPH, who in the 1990s worked for CDPHE on Rocky Flats, recently went public questioning not only the safety of Rocky Flats, but also whether the CDPHE officials responsible for Rocky Flats oversight have sufficient expertise in the effects of ionizing radiation on humans to be making the decisions they're making with respect to Rocky Flats safety. According to his LinkedIn profile, Carl Spreng of CDPHE has bachelor's and master's degrees in geology from Brigham Young University, and worked as an exploration geologist in the oil and gas industry before joining CDPHE. His predecessor in the role, Al Hazle, had a bachelor's degree in agriculture from Colorado State University, and had worked as a salesman, herdsman, and mountain guide before joining CDPHE, according to his resume.

Whereas the scientists who have conducted studies of offsite soil contamination and public health impact, and who have testified under oath in court proceedings on safe levels of plutonium exposure, are eminently qualified doctors from prestigious universities, and true pioneers in the fields of health physics and radiation epidemiology. Former Jefferson County Public Health Director Dr. Carl Johnson, who published the definitive downwinders' cancer incidence study, held an MD from Ohio State University and an MPH from the University of California at Berkeley. Dr. Richard Clapp, plaintiffs' expert witness in *Cook v. Rockwell* who conducted further epidemiological study, holds an Sc.D. in epidemiology from Boston University, an MPH from Harvard, and was Director of the Massachusetts Cancer Registry. Dr. Karl Morgan, the "father of the health physics field", who testified in the 1978 Rocky Flats Truth Force trespassing trial that there is no safe level of

plutonium exposure for humans, was the man who originally set the plutonium exposure standards while working at Oak Ridge National Laboratories. Dr. John Gofman, who testified in that trial that any plutonium soil concentration standard is a legalized permit to commit murder, was the third man in history to work with plutonium, and the first man in history to isolate milligram quantities of plutonium. The comparative qualifications of those two groups – the CDPHE officials versus the scientists who've done studies and testified – are like night and day.

If not the CDPHE, who will speak for Five Parks cardiac angiosarcoma victims Brian McNeeley and Nathan Panzer and their families? Who will speak for the countless thousands of other innocents past, present, and future, who have suffered or may suffer health consequences of unremediated offsite Rocky Flats contamination? That must be our job on the Jefferson Parkway Advisory Committee. All the people living south and east of the site, who will have plutonium-contaminated dust blown onto their properties as a result of Jefferson Parkway construction, do not even have a say in the matter. But we JPAC members do.

We, and the Jefferson Parkway Public Highway Authority Board of Directors, have a moral obligation to protect the health of the public by not further exposing it to Rocky Flats plutonium through re-suspension of dust caused by parkway construction along Indiana Street. Let us not compound the CDPHE's unconscionable negligence. To further expose the public would be severely immoral, and would be an act of grossly irresponsible government.

**ATTACHMENT F:  
JPAC PRESENTATION TO THE JPPHA BOARD OF  
DIRECTORS**

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# JEFFERSON PARKWAY ADVISORY COMMITTEE

RECOMMENDATIONS TO THE JEFFERSON PARKWAY PUBLIC HIGHWAY AUTHORITY  
BOARD

NOVEMBER 15, 2018



## PURPOSE OF THE JEFFERSON PARKWAY ADVISORY COMMITTEE

The purpose of the Jefferson Parkway Advisory Committee (JPAC) is to discuss issues related to the Jefferson Parkway, learn together, and provide feedback to the Jefferson Parkway Public Highway Authority (JPPHA) Board of Directors via reports and/or presentations.

## JPAC MEMBERS

The JPAC is comprised of twelve named members selected by the JPPHA Board of Directors, Bill Ray, Kevin Standbridge, and Heather Bergman. They were chosen to represent a range of community perspectives, geographies, and expertise.

- Bini Abbott
- Bill Branyan
- Rebecca Kallio
- Vera Ladtkow
- Britta Nelson
- Ian Owens
- Brent Smith
- Randy Stafford
- Jill-Ellyn Straus
- Gerald Taylor
- Brett Vernon
- Marc Wills

# JPAC MEETING TOPICS AND DISCUSSION

The JPAC met nine times. Below are the topics they discussed during each meeting.

- **January 18:** History/Status of the Jefferson Parkway; JPAC Protocols,
- **February 20:** Map-based Technical Presentation by HDR Engineering; Environmental Permits and Approvals
- **March 15:** Noise Study Presentation by Atkins Engineering; Wildlife Crossing and Safety presentation by CDOT and CPW
- **May 17:** Public Health Implications Related to Rocky Flats—presentations by CDPHE, Jon Lipsky, and Kristen Iversen
- **July 19:** Presentation of Jefferson Parkway Financial Feasibility Study; Presentation of Preliminary JPAC Recommendations
- **August 16:** JPAC Member Recommendations to JPPHA Board
- **September 20:** JPAC Prioritization and Refinement of Recommendations
- **October 23:** Final Agreement on Recommendations
- **November 10:** Final Agreement on Recommendations

## JPAC RECOMMENDATION PROCESS

1. Identification and shared learning of key topics related to the Jefferson Parkway.
2. Presentation and discussion of JPAC member recommendations
3. Prioritization and refinement of recommendations

**Outcome:** The JPAC reached full support on a range of recommendations (presented below). Several recommendations did not receive full support by all JPAC members, but the group agreed to submit the recommendations and note the various perspectives (also presented below).

- *Please note, these recommendations are not listed in any order of priority or intended sequence, with one exception: The JPAC respectfully requests that the JPPHA Board consider the recommendation regarding continual JPAC engagement first.*



# RECOMMENDATIONS WITH FULL JPAC SUPPORT

TOPIC: RECOMMENDATIONS PERTAINING TO PROCESS



# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: PROCESS

The JPAC should meet regularly (subject to cancellation) during the RFP process and construction of the Jefferson Parkway.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: PROCESS

JPPHA should state in the request for proposals (RFP) that evaluation criteria will include creativity, innovation, and aesthetics.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: PROCESS

JPPHA should ensure in perpetuity that local communities do not subsidize the operation and maintenance of the Parkway.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: PROCESS

During the period of time when the Parkway is not contiguously connected to the rest of the beltway, JPPHA should promote utilization of the Parkway by using financial incentives and/or other methods.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: PROCESS

JPPHA should provide clarity for the public on how the Jefferson Parkway helps achieve current Front Range transportation objectives and why JPPHA chose the Indiana Street alignment over other alternative alignments (e.g., Highway 93).



# RECOMMENDATIONS WITH FULL JPAC SUPPORT

TOPIC: RECOMMENDATIONS PERTAINING TO ROCKY FLATS  
AND ENVIRONMENTAL IMPACTS



# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: ROCKY FLATS AND ENVIRONMENTAL IMPACTS

JPPHA should adopt the mitigation measures from the 2008 Northwest Corridor Transportation Study Environmental Impact Statement (EIS).

## RECOMMENDATIONS WITH FULL JPAC SUPPORT

### TOPIC: ROCKY FLATS AND ENVIRONMENTAL IMPACTS

JPPHA should require dust control and mitigation during the construction of the Jefferson Parkway to deal with high winds. Additionally, air pollution control measures and strategies are required under Colorado's State Implementation Plan for the Denver Metro/North Front Range non-attainment area under the Clean Air Act. Dust control measures should be taken along the entire length of the Jefferson Parkway.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: ROCKY FLATS AND ENVIRONMENTAL IMPACTS

The JPPHA Board should install adequate air monitoring equipment and continuously monitor air quality in the Indiana Street corridor to assess whether construction activity re-suspends Rocky Flats contaminants into the air. Monitoring should begin before construction to establish an air quality baseline. Prior to construction there should be a transparent public process to show the methodology used to design the air monitoring equipment and allow people to:

- Evaluate and comment on the air monitoring equipment
- Specify thresholds of airborne contamination that should not be exceeded
- Specify consequences of exceedances of those thresholds

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: ROCKY FLATS AND ENVIRONMENTAL IMPACTS

JPPHA should require for testing of plutonium and also engage an expert independent of the concessionaire to identify any additional Rocky Flats contaminants within the Parkway right-of-way and other impacted areas to sample before allowing any construction-related, surface-disturbing activities and should provide a public comment period to review the test results.

- Results showing elevated levels of contaminants should be reported to CDPHE and any other relevant agencies.
- If contaminant levels exceed CDPHE's standards, construction should pause in the area where contaminants are found while mitigation measures are followed, then a resampling should be conducted.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: ROCKY FLATS AND ENVIRONMENTAL IMPACTS

JPPHA should develop a contingency plan for the unlikely but potentially disastrous event that a buried nuclear dump site is unearthed during construction of the Parkway.



# RECOMMENDATIONS WITH FULL JPAC SUPPORT

TOPIC: RECOMMENDATIONS PERTAINING TO COMMUNITY  
SAFETY, CONNECTIVITY, AND WELLBEING



## RECOMMENDATIONS WITH FULL JPAC SUPPORT

### TOPIC: COMMUNITY SAFETY, CONNECTIVITY, AND WELLBEING

JPPHA should include multimodal paths designed to allow users to cross or travel along the Parkway. Those paths should link up at the north and south ends and with the Greenway Trail. Development of multimodal options should be included in Phase I of construction.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: COMMUNITY SAFETY, CONNECTIVITY, AND WELLBEING

Mitigation measures should be taken to insulate the residential neighborhoods from the negative impacts of the Jefferson Parkway during the construction phase and when operational, to reduce the impacts of the Parkway dividing the community, and to keep the residents living alongside the Parkway safe. Mitigation measures should include:

- Regarding sound mitigation, measures should be considered carefully and creative solutions should be explored and implemented.
  - One option could include a sound absorbing tunnel, similar to the one built at the Beijing Zoo. Other creative solutions of this type, beyond traditional sound mitigation measures, should be encouraged.
  - Another option could be to deepen the roadway in residential neighborhoods as appropriate and build several at-grade, wide pedestrian walkways to partially cover the span to deflect noise and light pollution. Heavy vegetation could reduce light and sound impacts in the open areas between pedestrian walkways.
  - Traditional sound walls should be avoided by Leyden Rock, per the wishes of the local residents.
- Regarding light pollution (both highway lighting and headlights from motorists), tall light poles should be avoided, and highway lighting should be directed to the roadway and not visible to homes lining the Parkway or the surrounding neighborhood. Signage for the Parkway should be positioned well away from residential neighborhoods.
- Regarding safety, guard rails and similar safety measures should be utilized to keep vehicles away from residences in the event of an accident.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: COMMUNITY SAFETY, CONNECTIVITY, AND WELLBEING

JPPHA should prioritize measures to maintain the continuity of the Leyden Rock neighborhood. The City of Arvada embraces community connectivity and has invested significant time and resources to bring neighborhoods together. The Leyden Rock subdivision has organically become a strong community, with 15 community events in 2017 which drew over 5,200 total participants.

- There should be several wide, clear, park-like pedestrian walkways that span the Parkway to connect one end of the Leyden Rock community to the other.
- The design should integrate forested areas in empty spaces between the walkways to improve safety, provide sound mitigation, create green space, and increase neighborhood connectivity.
- The JPPHA should pursue partnerships with the City of Arvada and the Leyden Rock Metro District to maintain the character of the Leyden Rock neighborhood.
- The City of Arvada should ensure that the objectives in the City of Arvada's community plans, including the Arvada Arts and Culture Master Plan, the Arvada's Bicycle Master Plan, and the Parks Plan are prioritized. These objectives include expanding the arts and culture throughout Arvada and improving bicycle and pedestrian access (i.e., reducing barriers to access).

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: COMMUNITY SAFETY, CONNECTIVITY, AND WELLBEING

The design should include provisions for an access road from the northern side of the Leyden Rock neighborhood, along the Parkway, to the Highway 72 interchange. The access road could:

- Provide residents with an additional escape route if the area was threatened by a natural or man-made disaster.
- Provide an alternative route for access by first responders in the event that 82nd Street is blocked by flood, fire, or accident.
- Be slaved to the Parkway, or a separate roadway. Additionally, it could be tolled or un-tolled.
- Increase utilization of the Parkway by giving Leyden Rock Residents access they would not otherwise have. The increase in tollway utilization could be significant.
- Reduce traffic on Indiana and delay the need for expansion on that roadway.
- Reduce local opposition to the Parkway. The City of Arvada may need to consider partnering with the Authority in this effort since the access road would work towards many of the City's priorities.

# RECOMMENDATIONS WITH FULL JPAC SUPPORT

## TOPIC: COMMUNITY SAFETY, CONNECTIVITY, AND WELLBEING

JPPHA should ensure the objectives of all Master Plans for the county and municipalities adjacent to the Parkway are included in the final design.



# RECOMMENDATIONS **MIXED** JPAC SUPPORT



## RECOMMENDATIONS **MIXED** JPAC SUPPORT

JPPHA should change the alignment of the Jefferson Parkway to go up Highway 93 instead of Indiana Street to avoid conflict regarding public health and contaminants from Rocky Flats; the west side of Rocky Flats is less contaminated than the east side.

- A majority of the JPAC does not support this recommendation because it is outside the scope of this group and the design decisions have been established.
- Other members of the JPAC support this recommendation because it would avoid the controversy of stirring up Rocky Flats contaminants.

## RECOMMENDATIONS **MIXED** JPAC SUPPORT

JPPHA should utilize Indiana Street as the northbound lanes of the Parkway and construct the new southbound lanes in the Rocky Flats right-of-way (from west 96th Avenue north to Highway 128). A Parkway entrance/exit could be provided at 96th Avenue onto Indiana Street.

- A majority of the JPAC does not support this recommendation because they believe it would take away transportation opportunities from local residents. These members oppose the idea of taking away access to a public road. Additionally, people traveling from east of Indiana Street would not have access.
- A minority of the JPAC supports this recommendation because they believe that very few people will use the Parkway if they have the option to use Indiana Street. Additionally, they believe that the reuse of an existing right-of-way and the necessity to only add two lanes to Indiana Street would substantially decrease the cost of construction.

## RECOMMENDATIONS **MIXED** JPAC SUPPORT

JPPHA should sponsor an independent review of public health impacts by a qualified national institution that is independent of the Department of Energy (e.g., the National Academy of Sciences). The independent reviewer should assess risks and conclusions surrounding public health impacts.

- A majority of the JPAC does not support this recommendation because they question the necessity of conducting a retrospective review and believe it would be redundant.
- Others support this recommendation, emphasizing the importance of clarifying the public health impacts associated with Rocky Flats.



All members of the JPAC greatly appreciate the JPPHA Board's time and consideration and the opportunity to provide input on this important community issue. JPAC members look forward to hearing the Board's feedback and decisions regarding the recommendations.

**QUESTIONS?**

